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ORIGINAL ARTICLES

CERTAIN ASPECTS OF PULMONARY ABSCESS, FROM AN ANALYSIS OF 227 CASES*

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THE 227 cases in this series include 100 previously reported (Lord,—Pulmonary Abscess, Contributions to Medical and Biological Research, dedicated to Sir William Osler in Honour of his Seventieth Birthday, July 12, 1919. Paul B. Hoeber, 1919) and 127 more recent examples of pulmonary abscess at the Massachusetts General Hospital, or seen in consultation outside the hospital. In this and the preceding series no attempt has been made to make the difficult distinction between abscess and gangrene. Certain aspects of etiology are of interest.

ETIOLOGY

The importance in etiology of operations about the upper respiratory tract is even more striking than our previous experience indicated. While one out of every four in the first 100 cases could be traced to such a procedure, the proportion has now risen in the whole series to about one in every three, or 78 (34.3%) of 227 cases. Tonsillectomy was responsible for the largest single group, 49 cases, including 6 in which it was combined with removal of adenoids and 2 with a nasal operation. The extraction of teeth accounted for 21 cases. An operation for cancer of the jaw, tongue or lip (1 case each) drainage of peritonsillar abscess (2 cases) nasal operations alone (2 cases) and adenoidectomy alone (1 case) were concerned in 8 cases. Eighteen further cases may be ascribed to operations under a general anesthetic, making a total of 96 cases (42%) referable to a preceding surgical procedure. Inhalation of a foreign body accounted for 8, and the fumes of sulphuric acid for two more. Influenza initiated the process in three; and tonsillitis in one. Actinomycosis, an accident in which the nose was broken and a chicken bone lodged in the esophagus with perforation of the trachea were each responsible for one. There are thus 113 cases (49.7%) or one out of every two traceable to the aspiration of infected material from the upper respiratory tract or occurring under such circumstances as to make it reasonable to assume that the abscess arose in consequence of access to the lung of material derived from this region.

The etiologic factors in the remaining 114 cases are less clear. In 76 (33.4%) the onset was insidious and the cause undetermined. A more stormy onset in 28 (12.3%) suggests a relation to pneumonia, but the evolution and grouping of the initial manifestations do not speak for lobar pneumonia in more than a few instances. An origin from bronchopneumonia can neither be affirmed nor denied. The diagnosis of bronchopneumonia is always difficult and must be made by a process of exclusion. It usually occurs as a complication of an existing infection of the upper parts of the respiratory tract, is of insidious onset and frequently unaccompanied by definite physical signs. Such initial symptoms as these cases presented may as well have been due to a developing abscess as to bronchopneumonia.

Of the ten remaining cases metastasis of bacteria with or without embolism and infarction may have played a part in 8 and extension from abdominal or pleural suppuration in two.

On the whole, the impression is gained from a review of these cases that ingress into the deeper parts of the respiratory tract of infected material from above is to be regarded as the chief cause of pulmonary abscess. It is one of the hazards of surgery in the course of which in certain instances it appears to be an inevitable misfortune, while in others the history suggests that it might have been prevented by greater care in the avoidance of the aspiration of blood, tissue or infected material. Lobar pneumonia appears to be of little moment in etiology and an origin in bronchopneumonia is uncertain. Search for spirochetes in a number of the more recent cases has failed to demonstrate them in such numbers as to suggest that they are to be regarded as of importance in etiology.

PULMONARY ABSCESS AS AN INDEPENDENT AFFECTION

In both the post-operative and the non-operated group pulmonary abscess arises so frequently apart from lobar or obvious bronchopneumonia as to suggest that it is to be regarded usually not as an accident of resolution, as ordinarily believed, but as an independent affection due to the aspiration of putrefactive organisms into the deeper parts of the respiratory tract.

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SYMPTOMS

The onset is often insidious and accompanied by gradually increasing cough and expectoration. Aside from its bad odor the sputum presents no special gross features. Malaise, fever, chills and sweats usually occur during the course of the infection. Pain, increased by long breath and cough, is common. Dyspnea may be present but is not ordinarily a prominent symptom. In cases in which it occurs it is likely to be due to limitation of respiratory motion from pain or to be associated with root abscesses which tend to obstruct the ingress and egress of air into the affected lung.

DIAGNOSIS

Five cardinal indications may be briefly discussed:

(1) Cough and Explosive Expectoration. The sudden expectoration of a large amount of pus is almost without exception due to one of three causes: the rupture of a pulmonary abscess, empyema or sub-diaphragmatic collection of pus into the bronchi. The exclusion of empyema or sub-diaphragmatic abscess may usually be accomplished by the history, and by physical and roentgen-ray examination. Explosive expectoration as a sign of abscess is uncommon and occurs in only about ten per cent of the cases. Cough is ordinarily productive and the sputum raised in small or large amounts at frequent intervals. At times there is the periodic evacuation of considerable pus one or more times during the day with comparative freedom from cough and expectoration during the intervals.

(2) Foul Breath and Foul Sputum. Both may be present but foul breath is more common than foul sputum. Bad taste in the mouth is often the first intimation and likely to persist as one of the most disagreeable features of the illness. It may be noted only at the end of a paroxysm of cough and be so slight as to need careful attention to the expired air at the end of a coughing spell. The odor may be only slightly musty. It may be foul or horribly offensive. Foul breath and foul sputum seldom occur apart from pulmonary abscess and when present abscess should always be suspected. On the other hand, however, pulmonary abscess in rare instances occurs without foul breath or foul sputum and their absence does not exclude pulmonary abscess.

(3) Elastic Tissue in the Sputum. Elastic tissue with alveolar arrangement in the sputum is certain evidence of a pulmonary destructive lesion and when unaccompanied by tubercle bacilli is strong evidence against pulmonary tuberculosis. Absence of free communication between the abscess and the bronchi is the usual explanation of the difficulty in demonstrating elastic tissue in many cases.

(4) Dulness on Percussion over a Circumscribed Area. It is at times difficult to demonstrate the site of an abscess even of considerable size. *The most common single sign is dulness on percussion.* Other signs are variable and depend on the site and size of the involved area, whether the communication with the bronchus is open or closed, and the amount and character of the neighborhood inflammation. Lack of time does not permit a consideration of these matters. Atelectasis arising in consequence of abscess at the root of the lung modifies the physical findings to an important degree and merits further attention. In the presence of a root abscess with partial obstruction of the bronchi there is likely to be diminished motion of the affected side, narrowing of the intercostal spaces and even displacement of the heart toward the affected side. The signs of atelectasis are usually most marked at the base, where it is not uncommon to find dulness, diminished breathing, voice, whisper and tactile fremitus and fine or medium moist non-consonating rales. Sibilant rales may be present over the lung in consequence of bronchial obstruction at the root. It is a common mistake to regard an atelectatic area at the base behind as the site of the abscess until roentgen-ray examination discloses the latter at the lung root. Succussion is not to be expected and even large losses of pulmonary substance of non-tuberculous origin seldom give the signs of cavity.

(5) Roentgen-Ray Examination. This is an indispensable method of investigation. The most characteristic appearance is a roughly circular area of increased density of variable size with moderately well-defined margins surrounding a central rarefied area. If the film is taken with the patient upright or in the lateral prone position a fluid level may often be demonstrated. Fluid level is, however, not always to be seen. If the abscess is full, the entire area of involvement may be evenly dense and the cavity apparent only after evacuation of the contents by cough. Reëxamination after complete evacuation may then show, on comparison with earlier films, a central area of diminished density in the region in question. Partial evacuation may show a cavity with fluid level. Some caution must be exercised in the interpretation of films taken only at one sitting not to mistake a central area of lack of involvement or resolution of an earlier pneumonic process for a cavity.

Important conclusions regarding operability may be drawn from the radiograms. The site and extent of the process are better defined by roentgen-ray than by physical examination. There is a type of diffuse, uneven mottling unsuitable for drainage because of the absence of any abscess of sufficient size to make evacuation desirable. A negative roentgen-ray examination does not necessarily exclude abscess which may be obscured by the shadow of the heart or the diaphragm.

Exploratory puncture of the unopened thorax is unnecessary and dangerous and should be condemned as a diagnostic procedure for the purpose of establishing the presence of a pulmonary abscess.

PROGNOSIS

The estimated mortality of abscess*, treated by medical means, is about 75 deaths out of 100 cases and of the remaining 25 about 15 continue to cough and expectorate purulent material. They are in danger chiefly of recurring acute febrile attacks of longer or shorter duration due to extension of the inflammatory process into nearby or remote parts of the lung and to the lesser hazard of fatal hemoptysis, purulent pleuritis or cerebral abscess. Recovery without operation may be expected in about 10% of the cases and occurred in 25 (11%) of the 227 cases in our series.

It is important to appreciate the clinical aspects of this group which goes on to recovery without resort to other than medical treatment and I shall, in consequence, consider these recovered cases more at length. The etiologic factors conform very closely to those in the series at large. Operations about the upper respiratory tract were, however, responsible for a somewhat larger number proportionally than in the whole series. Of 15 cases (60%) in this category 7 followed tonsillectomy, 4 the removal of tonsils and adenoids, 3 the extraction of teeth and one an operation for cancer of the jaw. One was due to the aspiration of a tooth fragment, the expectoration of which was followed by recovery. In one, the pulmonary abscess occurred in the course of a septic hand, suggesting metastasis of infected material as a source. The cause was undetermined in 8 (32%). Etiologic factors thus appear not to influence the outlook to any important degree in this group. Though aspirated foreign bodies are of minor importance in our series, their early bronchoscopic removal may be expected to a large extent to eliminate abscess as a complication and favorably influence the course of foreign body abscess already established. The previous duration appears to influence the prognosis and varied from 9 days to 9 weeks, with an average for the group of about three and one-half weeks. Of 106 cases in the whole series with a previous duration of 8 weeks or under, 24 (22.6%) recovered without other than medical treatment. Early diagnosis and prompt institution of postural drainage probably played a part in favorably modifying the course of these cases.

The intensity of the infection is also of moment in estimating the chances for recovery and in general the septic manifestations were less severe in the 25 recovered cases. A location of the process at or above the level of the lung root, as in 19 (75%) of the 25 cases appears to be relatively favorable, the prevailing site in the whole series being in the lower lobes. The more cranial site doubtless facilitates drainage. The extent of the pulmonary involvement was in general less considerable in the recovered cases, but two with abscesses the size of an orange and with large central cavity recovered completely. The total duration of the recovered cases was about two months. The longest duration from onset to recovery was ten months.

A short previous duration, relatively mild symptoms and an inextensive process at or above the region of the lung root, thus appear to be factors of importance in increasing the chance of recovery without resort to radical measures in treatment.

TREATMENT

Pulmonary abscess presents a difficult therapeutic problem and the results of treatment leave much to be desired no matter what the choice of methods.

Expectant Treatment. Under medical treatment alone, as already noted, death may be expected in 75%, incomplete recovery in 15% and complete relief in 10% of the cases. Of the cases with a previous duration of two months or less complete recovery may be expected in 22%. In the adoption of medical measures alone and the attempt to evacuate the cavity through the natural channels by postural drainage, there is, however, the risk of extension of the suppurative process into nearby or remote parts of the lung, the development of a complicating pneumonia or empyema, cerebral abscess or septicaemia. An expectant policy may change the local or general condition to one less rather than more favorable for the application of other methods of treatment.

In view of the dangers incidental to radical measures and the chance of recovery by medical treatment alone it seems desirable, in suitable cases, first to give a fair trial to Postural Drainage. This is applicable, with few exceptions, only to abscesses with a previous duration of two months or less. It is most likely to be successful in the relatively mild, root and upper lobe cases. The patient should be constantly prone in bed to facilitate evacuation of pus by way of the bronchi. By some experimentation it may be found that by lying on one or the other side, the back or abdomen, drainage is favored. Elevation of the foot of the bed to a height of 20 to 30 centimeters for two to three hours night and morning (Quincke's position) is likely to be of assistance. The patient should be urged to cough and empty the cavity every one to two hours during the day, meanwhile lying with his head and trunk over the edge of the bed. While these measures are being carried out, an estimate should be made of progress as indicated by the symptoms, a change in the physical and roentgen-ray findings and the leucocyte count. The interval during which such treatment should be continued depends on the seriousness of the case and the favorable or unfavorable course of the disease during the period of observation. Persistence of fever, unabated septic manifestations, and increase in the extent of the process may be taken as an indication that more radical means should be considered. Improvement in local drainage by bronchoscopic aspiration and lavage, where skilful operators are available, may be considered, especially in deep abscesses near the lung roots.

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*Lord, loc. cit.

Surgery. Inasmuch as the operated cases represent a selected group the results are not strictly comparable with the estimated outcome in the unoperated series. Owing to the adoption of radical measures on the more severe cases after ineffectual trial of medical treatment the surgical figures are to be regarded as more favorable by comparison than would at first sight appear. Viewed in the light of this disadvantage, the outcome in the operated series is greatly in favor of the method. Of 117 operated cases, 56 (47.8%) died. Of the recovered cases, 18, or 15.3%, of the whole number were completely relieved, 22 (18.8%) still cough and 21 have not been traced. In our first 62 operated cases there were 6 fatalities in part at least to be ascribed to the operative interference, although all 6 would probably have died without operation. Post-operative hemorrhage and pneumonia, suffocation from the inhalation of pus, open pneumothorax and empyema were then the chief hazards of surgery. The substitution of local for general anesthesia and advances in surgical technic have to a large extent eliminated these dangers and in the last 55 operated cases there are no deaths which can be directly attributed to the operative interference itself.

Though our earlier experience seemed to indicate that the acute cases were more favorable for surgery, this is not borne out by the larger series and the percentage of deaths, recoveries, complete and incomplete relief is about the same irrespective of a previous duration of over or under two months. A more secure limitation of the inflammatory process and greater chance of an adherent pleura with the lapse of time probably counterbalance other disadvantages which waiting entails.

Surgical drainage is to be considered after a preliminary trial of postural treatment. Circumscribed lesions, peripherally placed, with an overlying and adherent pleura and in the lower rather than the upper parts of the chest are relatively favorable for operation. Centrally placed abscesses, especially in the region of the lung root, are relatively unfavorable. Diffuse lesions with multiple cavities are in general unsuitable for operative drainage. Advances in thoracic surgery make possible the consideration in a selected group of other surgical measures. With chronic, unilateral, single or multiple cavities in an indurated lung, thoracoplastic collapse of the overlying chest wall may give notable relief or serve as a useful preliminary to drainage by pneumotomy. Lobectomy or cautery extirpation are desperate measures with a high operative mortality, but may be entertained for chronic multiple circumscribed lesions when the patient finds the condition intolerable.

Artificial pneumothorax appears at first sight a relatively simple procedure, but involves the risk of inducing empyema by the rupture of pleural adhesions and makes later operation more difficult and dangerous. A small risk attaches to the procedure itself. For the present, recent, centrally placed abscesses, without pleural involvement as indicated by lack of pain, and by physical and roentgen-ray examination may be regarded as most favorable for a further trial of this method.

NERVE REFLEXES AFFECTING THE CIRCULATION*

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PATHOLOGY has long been recognized as one of the fundamental sciences of medicine. That physiology is also a foundation stone of medicine is generally admitted, but it would seem that with most of us physiology gradually drops back to something we studied in our undergraduate days and rarely use in our daily work. Experience shows that pathology is unable to explain many problems that concern the clinician; then it is that knowledge of physiology may be valuable. A realization of the foregoing has led the writer to a renewed study of the physiology of the circulation, and from this have come certain conceptions of the working of the cardiovascular system which appear to be helpful.

It is the purpose of this paper to discuss briefly[1] the influence of certain nerve reflexes on the circulation.

THE NORMAL HEART

Starling[2] writes, "In the quickening of the heart, which accompanies bodily exercise, another reflex mechanism comes into play, to which attention has been called by Bainbridge. Any distention of the right auricle evokes a reflex quickening of the pulse rate, chiefly by diminishing the vagus tone but also probably to a less extent by reflex stimulation of the reflex accelerator nerves. It thus seems that the heart is connected with the heart center in the medulla, governing its rate of beat, by two sets of afferent nerves, which are stimulated by a rise of pressure within the cavities to which they are distributed. Stimulation of one set coming from the arterial end, e. g. the left ventricle, causes a reflex slowing of the heart. Stimulation of the other set, which are distributed to the venous end of the heart, evokes increased frequency of the heart beat. Both these sets of impulses are of great importance in correlating the activity of the heart and the amplitude of the circulation with the metabolic needs of the body as a whole."

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Some fibers of the vagus trunk to the heart and aorta are known as the depressor nerve fibers; in certain of the lower animals the depressor nerve runs as a separate cord. The depressor fibers of the vagus have been shown to be distributed to the first part of the aorta, the pericardium especially that of the auricle, the auricular endocardium, and less frequently in the ventricular endocardium and in the connective tissue of the myocardium. If this nerve is divided there is normally no change in the action of the heart or blood pressure; and the same holds true if the peripheral end is stimulated. If, however, its central end be stimulated, a marked fall in blood pressure and slowing of the heart follow; the dilation of the peripheral blood vessels without change in the heart rate results if the central end of the depressor nerve is stimulated after the vagus trunk to the heart has been completely severed. Burton-Opitz[3] considers the depressor nerve to play an important part in varying the resistance in the vascular channels against which the heart must act. In the opinion of this physiologist this reflex lowering of the peripheral resistance places the cardiac muscle in a much more favorable position to contract without strain.

There is evidence that there is a reflex from the veins to the arteries. McDowell[4] finds that when the pressure in the large veins is low impulses pass up by way of the vagus and stimulate the vasomotor center in the medulla and so increase the arterial tone. He points out the importance of this reflex in supplementing the depressor reflex in conditions of blood loss.

The primary purpose of the heart may be said to be that of propelling a sufficient amount of blood to the place where the latter is utilized, namely the capillary field. Whenever there is not an adequate blood flow in the capillaries to meet the tissue needs certain automatic adjustments take place. ' Constriction of some vessels and dilation of others may divert the blood to the regions in which it is particularly needed and permit a freer flow, respectively, while, as indicated above, certain reflex nerve stimuli may cause the heart to increase its rate or force of contraction.

Tulgan[5] states that the nervous centers concerned with the regulation of the cardio-vascular mechanism are situated in the medulla and have a wide relation with afferent nerve fibers from all parts of the body including the heart itself. He concludes from his experiments that the responses of the cardio-vascular system seem to be guided by two antagonistic nervous mechanisms, one cardio-inhibitory and the other cardio-accelerator; both of these through the algebraic summation of their effects act under ordinary conditions in the best interests of the organism. There is small doubt that these reflexes add much to the smooth working of the circulation and in maintaining the proper supply of blood to the place where its physiologic properties are utilized, i. e. the capillary network in the tissues.

ANGINA PECTORIS

The exact lesion, if any, in the heart or the sequence of events occurring in the circulatory system in angina pectoris is unknown. Pathology has failed to solve the problem; angina pectoris is a clinical entity that is absent after death. The anginal syndrome is a functional (not meaning non-existent) condition in the same sense as are the arrhythmias such as premature beats, etc.

It has been suggested[6] that the essential feature of angina pectoris is a failure of the protective mechanism of reflex dilation of the peripheral blood vessels. Dilation of the peripheral stream-bed causes a more rapid drainage of blood away from the heart, and lessens the rise of pressure in the first part of the aorta and also the height of that which must be achieved in the left ventricular cavity before the aortic valve can be forced open.

In the three types of heart disease, namely arteriosclerotic heart disease, cardio-vascular syphilis and hypertensive heart disease, with which the syndrome, angina pectoris, is most commonly associated there are pathologic changes in the ventricular muscle and the first part of the aorta or structural alteration in the peripheral blood vessels, or both, which may make abnormal the conditions occurring in the circulation when exertion is undertaken.

The sequence of events in angina pectoris may well be: a failure of the depressor nerve reflex of dilation of the peripheral blood vessels, which leads to a sudden rise in the pressure in the first part of the aorta and the cavity of the left ventricle; this heightened pressure irritates the local nerve end-plates which respond by pain referred to the arm, shoulder, etc.

AORTIC INSUFFICIENCY

Stewart[7], in his work on experimentally produced insufficiency of the aortic valve, apparently obtained evidence of the working of the depressor nerve reflex. He believed that the collapsing type of pulse is not due directly to the regurgitation of blood but to the exciting of the depressor nerve reflex. The volum of blood actually returned into the left ventricle is relatively small whereas a pressure wave may more readily travel backward. It is suggested that either of these, but more especially the pressure wave, stimulates the endings of the depressor nerve.

Stewart's theory that in aortic insufficiency a reflex from the heart to the periphery produces a dilation of the blood vessels aroused some controversy, but, in my opinion, it stands unshaken. The occurrence of the Corrigan or collapsing type of pulse, often fairly well marked, in anemia, fever, hyperthyroidism, convalescence, some cases of arteriosclerosis, and in states simply of low vasomotor tone is additional evidence that the *pulsus celer* is not necessarily due to a reflux of blood through the aortic valve.

HYPERTROPHY OF THE HEART MUSCLE

The accumulating evidence that the normal heart does not hypertrophy even in trained athletes, although some degree of hypertrophic change is the rule in the presence of chronic heart disease with or without increased blood pressure, makes unconvincing the usual explanation, i. e. the heart hypertrophies because of increased work.

The growth of skeletal muscle, according to the physiologists, is absolutely dependent upon the connection of the muscle with the central nervous system. Trophic influences are received through the motor nerves; the amount of the blood supply is of secondary importance.

When the flow of blood through the capillaries is not adequate for the needs of the tissues certain adjustments of the circulation take place. Some of these adjustments are local in their action and in addition there are reflex nerve stimuli back to the heart causing an increase in the rate or force, or both, of the cardiac contractions. These reflex stimuli are probably mostly from the sympathetic which is augmentative in its effect.

It is suggested that these reflex nerve stimuli from the periphery to the heart if sufficiently repeated, are the essential cause of hypertrophy of the myocardium.

HYPERTENSIVE STATES

Stimuli from the nervous system certainly play an important part in increase of the blood pressure. It is becoming a well known clinical observation that the level of the pressure obtaining in essential hypertension, or hyperpiesia, often is very unstable. O'Hare[9] has published some very striking instances of the effect of nervous excitement in increasing the blood pressure in patients affected by essential hypertension. Tulgan[10] considers the cardio-accelerator center in the medulla as intimately concerned with the maintenance of a certain level of blood pressure which under ordinary conditions is to the best interests of the organism. There is also the cardio-inhibitory nervous mechanism. Overaction of the former[11] of these mechanisms or a lessening of the inhibition of the latter are doubtless concerned with states of high blood pressure. However, the significance of nerve stimuli in hypertension is not yet clear enough to the writer to permit further discussion without indulgence in sheer speculation.

SUMMARY

The nervous centers concerned with the regulation of the cardio-vascular system are situated in the medulla and have a wide relation with afferent nerve fibers from all parts of the body including the heart itself.

Stimulation of afferent nerves which are distributed to the venous end of the heart evokes increased frequency of the heart beat; while stimulation of another set coming from the arterial end, i. e. the left ventricle, causes a reflex slowing of the heart.

There is evidence that a reflex lowering of the peripheral resistance can be brought about through the depressor fibers of the vagus nerve. Likewise a reflex may occur the reverse way from the peripheral vessels to the heart.

The primary purpose of the heart may be said to be that of propelling a sufficient amount of blood to the place where the latter is used, namely the capillary field. Under ordinary conditions these reflex nerve mechanisms assist in the fulfillment of the above purpose and act in the best interests of the organism.

It has been suggested that the essential feature of the syndrome, angina pectoris, is a failure of the depressor nerve reflex of dilation of the peripheral blood vessels.

Stewart has asserted that the collapsing type of pulse in aortic insufficiency is due to the exciting of the depressor nerve reflex.

It is also suggested that reflex nerve stimuli from the periphery to the heart, if sufficiently repeated, are the primary cause of hypertrophy of the myocardium.

Stimuli from the nervous system certainly play an important part in hypertensive states.

In view of the above it seems necessary to consider the circulation as a whole rather than from the standpoint of its separate organs, i. e. the heart, vessels, and content of blood.

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THE MORTALITY OF INTESTINAL OBSTRUCTION*

A Study of One Hundred and Fifty Cases Coming to Operation or Autopsy

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THE past twenty years have shown little if any decreased death rate in this condition which Moynihan[1] terms "one of the gravest and most disastrous of emergencies." To ascertain the cause of this continued high mortality from intestinal obstruction a study was made of cases admitted to Ancon Hospital during this period. Treeves[2] has classified intestinal obstruction as acute, chronic, and those chronic cases ending acutely. No attempt is made to classify cases in this report, all having signs and symptoms of acute obstruction at time of operation or findings of such at autopsy in those dying unoperated. Strangulated herniae with intestinal involvement are included in the series while cases of paralytic ileus dependent on non-mechanical conditions are omitted. Of the one hundred and fifty cases observed, one hundred and nineteen were males and thirty-one females, ninety-five black and fifty-five white, and the age limits three days to sixty-eight years. One hundred and twenty cases might be classified as acute in onset, eighteen as gradual, and twelve not determined on account of the meager records obtained. Table I shows cases by groups, the operative mortality, and total death rate.

TABLE I

Intestinal obstruction due to	Operated	Died	Per cent.	Not operated	Died	Total	Died	Per cent.
Strangulated herniae	59	19	32.4	1	1	60	20	33.3
Post-operative adhesions	24	8	33.3	1	1	25	9	36
Peritoneal bands	9	5	55.6	4	4	13	9	69.2
Intussusception	7	5	71.4	5	5	12	10	83.3
Carcinoma intestines	7	3	42.9	1	1	8	4	50
Volvulus	5	2	40	2	2	7	4	57.1
Chronic adhesive peritonitis	4	1	25	1	1	5	2	40
Internal openings	4	3	75	1	1	5	4	80
Mesenteric vascular occlusion	2	2	100	2	2	4	4	100
Congenital malformations	2	2	100			2	2	100
Stricture intestine				2	2	2	2	100
Impacted feces*	1	0	0	1	1	2	1	50
Gall stone	1	1	100			1	1	100
Benign tumor intestine	1	0	0			1	0	0
Splenomegaly with twisted pedicle				1	1	1	1	100
Undetermined causes	2	2	100			2	2	100
	128	53	41.3	22	22	150	75†	50

*Mango fibres.
†Autopsies, 46.

It may be noted that the per cent. of deaths in unoperated cases is one hundred. The reasons for not operating were as follows:

Operation refused	1
Insane patients, undiagnosed	3
Moribund on admission	8
Developed on ward as complication, unrecognized	2
Incorrect diagnosis	4
Undiagnosed	3
Delay on account of insufficient symptoms	1

Previous operations entering into the etiology were as follows:

Appendectomy	11
Laparotomy, cause not known	5
Pelvic inflammation	3
Posterior gastroenterostomy	2
Uterine suspension	1
Appendectomy and uterine suspension	1
Cholecystostomy and uterine suspension	1
Lateral intestinal anastomosis	1

The following symptoms were noted in the order of their frequency:

Pain	102
Vomiting	90
Abdominal distention	47
Scrotal tumor	45
Abdominal tenderness	37
Constipation	34
Obstipation	27

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*Read before the Canal Zone Medical Society, November 18, 1924.

Nausea	20
Abdominal rigidity	20
Fecal vomiting	17
Blood in stools	14
Diarrhoea	9
Fever	9
Hiccough	5

Pain with obstruction of the small intestine is frequently referred to the umbilicus while that due to involvement of the large gut is usually at the site of the lesion. It is often described as cutting or colicky, although this is not constant. Shock and prostration although rarely mentioned in our records are constantly seen in cases of acute onset with involvement of the circulation.

Thirty cases received purges before entrance to hospital with bowel movements resulting in thirteen, twenty-three were given enemata with positive results in ten, and thirteen received both purge and enema with positive results in four. It may thus be seen that obstipation is far from being a constant symptom and may be explained by the fact that at the time the purge or enema is given the obstruction has not become complete or the bowel below the obstruction only is evacuated.

Blood and mucus in the stood is a very constant finding with intussusception in infants.

Temperature on admission ranged from 95°F. to 106°F. and was subnormal in twenty-three, normal in eighty-eight, above normal in twenty-eight, and not recorded in eleven. Pulse rate on admission ranged from 40 to 160 per minute, and was subnormal in five, normal in forty-three, above normal in eighty-seven, and not recorded in fifteen. Respiratory rate was normal in ten, above normal in one hundred and twenty-three, and not recorded in seventeen. The elevation of the respiratory rate is the most constant symptom of this group.

It is not the purpose of this paper to discuss at length the immediate cause of death from acute intestinal obstruction but to determine if possible how this excessive mortality rate may be reduced. We have learned from animal experimentation and operating room observation that toxic substances are formed in the proximal segment of the blocked intestine, that the higher the obstruction the more toxic are the substances, that this toxic material is not readily absorbed through a normal mucosa but as soon as distention and consequent interference with the circulation occurs absorption in overwhelming doses follows. Death may result from this septic absorption, peritonitis of gangrenous gut, dehydration and acidosis, post-operative shock and peritonitis, or more often from combinations of these various conditions. Treatment to be effectual must be so directed as to prevent the occurrence of any of these conditions and the only method is by early surgical operation. Moynihan[1] states that operation will show that in 75 per cent. of cases operation has been too long deferred and that few surgeons can show a mortality under 50 per cent. and a mortality over 10 per cent. is the mortality of delay. Twenty-five years ago Maurice H. Richardson[3] said surgical intervention is indicated whenever an acute intestinal obstruction is suspected. When the nature of the lesion is beyond doubt the favorable period for intervention has usually passed.

The importance of early operation is plainly shown in Table II.

TABLE II

THE RISING MORTALITY OF DELAY

From onset of symptoms to operation	Total	Deaths	Per cent.
Under 6 hours	13	0	0
" 12 "	25	1	4
" 24 "	39	7	15.4
" 48 "	50	9	18
" 3 days	70	17	24.3
" 4 "	84	26	30.9
" 6 "	99	37	37.4
All cases	128	53	41.3

Delay may be the fault of the patient, the attending physician, or the surgeon. Over that of the patient we have no direct control. Of the one hundred and fifty cases observed, fifty-six were admitted to hospital during the first day of symptoms, thirty-seven during the second and third days, twenty-seven between the third and twelfth days, eighteen after three weeks, and in twelve the interval was ill defined or not stated.

Inaccessibility to hospitals and surgeons of recognized ability, repeated use of purges, enemata, and morphine, and the inability to recognize the seriousness of the condition will account for a large per cent. of the delays charged to the attending physician.

Patients admitted to hospitals on medical services with more or less obscure intestinal symptoms are frequently subjected to various laboratory and X-ray procedures together with medical treatment, all of which consumes valuable time. In this series forty-five were thus admitted, of whom thirty-six, or 80 per cent., died. In thirty-four cases operative treatment was delayed longer than six hours after admission to hospital or twenty-four hours after onset of symptoms in patients admitted direct to the surgical service. Sixteen or 47 per cent. of these died. Why was immediate operation not performed?

A certain group of cases present more or less the following picture. The patient is admitted with occasional cramp-like pains in the abdomen, perhaps the previous meal was vomited, the temperature and pulse are normal, there is no distention and only slight indefinite tenderness on palpation. An enema is given with good results, the patient feels better and we believe the trouble to be ordinary intestinal indigestion or some slight food poisoning. The next day there is a little more vomiting with slight distention. The enema is repeated, perhaps preceded by a cathartic, and the distention and vomiting subsides, the patient again feels much improved and while we do not feel quite as sure as formerly we are at least content to extend the observation period. Within the next twenty-four hours the patient has changed rapidly, vomiting becomes excessive, the face becomes drawn, the pulse is increased, and the abdomen begins to show a certain doughy distention with discomfort on manipulation. Even now the patient looks like a good risk and the abdomen is explored. On incision the intestines are more distended than we supposed, a band or adhesion has completely obstructed the gut and the proximal intestines are red and oedematous and filled with liquid feces and gas. These intestines will stand very little handling, sutures tear through easily, and we wonder how the condition could have made such progress without more severe symptoms. It is much harder to get out of such an abdomen than it is to get into it. Finally when we have finished and with the aid of an enterostomy the intestines are once more inside the abdomen after much manipulating and traumatizing we find our patient in a very critical condition and death usually supervenes within twenty-four hours.

Another group are the immediate post-operative cases. With the exception of the usual slight early vomiting and distention all goes well for several days, when vomiting and distention begins to recur. We feel that this is still due to an ordinary simple ileus and give cathartics, enemata, pituitrin and eserin with the hope that it will subside as numerous other cases have. One is very reluctant to advise a second laparotomy so soon until various other measures are tried and the diagnosis is beyond doubt. By the time we realize that an obstruction is present and explore, the golden opportunity has usually passed and our intervention has been in vain. It is surprising with what rapidity these cases can suddenly go bad. Thus it is shown how delay and procrastination on the part of the surgeon may be the cause of excessive mortality in acute intestinal obstruction.

Referring to the mortality rates of various clinics for different periods of time we find our own does not compare unfavorably and it seems fair to assume that our errors of omission and commission probably prevail elsewhere.

How can this mortality rate be reduced?

1. Preventive surgery.

According to our observations and those of others acute intestinal obstruction follows appendectomy more often than any other abdominal operation. This is due to its being the most common, that the operative area is in close proximity to loops of small intestine, that drainage is frequently necessary, and being an emergency operation is oftentimes performed by more or less inexperienced operators without that refinement of technic that prevails in larger hospitals. Gatch[12] has recently warned against the use of gauze packs to wall off the region of the abscess. These traumatize the peritoneal surfaces and lead to much wider infection of the peritoneum than would occur if they were not used. Suppurative cases are best drained along the posterior parietal peritoneum by a McBurney incision close to the anterior superior spine even though the abdomen has been opened through the right rectus muscle or in the midline. Inversion of the appendix stump and covering the denuded area on the cecum with the mesenteric stump will prevent formation of solitary adhesions in this region.

TABLE III

Mortality Rates as Compiled by Various Observers

	Period	Cases	Per cent. Mortality
J. M. T. Finney (4)	1921	217	36
C. T. Horine (5)	1924	107	40
C. L. Scudder (6)	1907	121	60.4
St. Thomas Hospital, London (7)	1906	543	58
E. P. Richardson (8)	1920	118	41.5
Guillaume (9)	1921	382	63.2
Deaver and Ross (10)	1915	276	42
C. L. Gibson (11)	1900	1000	43.2

Intestinal obstruction following operation for pelvic inflammatory disease is not as common as one would expect for the reason that the process is frequently confined to the pelvis. The rectum and sigmoid being nearest cover the operative area preventing the small intestine from reaching the pelvis. However, it behooves us to peritonize these cases the best we can and Culbertson's[13] method of using the sigmoid when other peritoneum is not available is to be commended.

2. Early diagnosis.

If one waits for stercoraceous vomiting before operating the mortality will be appalling. Cases with severe sudden onset and collapse are usually easy to diagnose and consequently operated early with resulting low death rate. It is the obscure case we must diagnose earlier. As before quoted, Maurice H. Richardson[3] advised surgical intervention whenever an acute intestinal obstruction was suspected and E. P. Richardson[8] in a plea for earlier diagnosis observes that the great difficulty lies in the absence of physical signs to confirm a suspicion of obstruction. We believe that colicky pain, vomiting, and constipation persisting after thorough cleaning of the lower bowel by enemata suggests a serious intra-abdominal condition and the presence of a previous laparotomy scar greatly strengthens the diagnosis of acute obstruction.

Close personal attention must be given to the results of enemata and we recall a case in which good results were reported in spite of a gradually increasing abdominal distention. A milk and molasses enema given personally revealed the fact that only a pint could be taken at one time and a diagnosis of probable malignancy of the sigmoid was made. Operation disclosed a complete obstruction by a napkin ring carcinoma and this was incidentally the first symptom noted by the patient.

Morphine must be given carefully and a condition that a small dose of morphine does not wholly remove the pain is not rarely due to a lesion within the abdomen that only an operation can relieve[1]. By operating on early symptoms and physical findings we may occasionally find the suspected obstruction does not exist but we will reduce our death rate substantially in those cases which if observed for another twenty-four hours, all doubt as to diagnosis will have disappeared.

3. Choice of anaesthesia.

Regarding the use of spinal anaesthesia in acute intestinal obstruction, Mixter is quoted as follows: "One of the greatest advances in the treatment of this most serious condition is the use of spinal anaesthesia. Although a simple enterostomy may be done and should be done with infiltration anaesthesia, this does not as a rule admit of a thorough enough examination of the point of obstruction. Chloroform, ether, gas and oxygen unless given to a point of complete relaxation do not permit the examination of the abdominal contents without undue violence. We have all seen intestines forced violently out of our incision, become congested and ecchymosed and even after they had been emptied and the operation completed, there is great difficulty in returning them to the abdominal cavity against the rigidly contracted abdominal muscles. With novocaine spinal anaesthesia we have a method which gives thorough relaxation. The shock is enormously less than with a general anaesthetic on account of the ease with which the intestines are handled and the operation can be easily completed and the patient in bed before the anaesthetic wears off. It is well known that under spinal anaesthesia, and this is a most important point, the large intestine will often empty itself on the operating table through the relaxed sphincter and the surgeon and the patient be saved a great deal of later trouble."

Boyd[16] of Panama who has probably used spinal anaesthesia as often as any other surgeon corroborates Mixter's findings but warns against its use in cases with low blood pressure. An intraspinal anaesthetic safe under all conditions would indeed be of great value in this condition.

In desperate cases with marked distention where high drainage of the intestinal tract only is indicated, infiltration anaesthesia is safest and best.

Ether although unsatisfactory in all but early cases must still be the choice in the majority of instances. Gastric lavage should immediately precede all general anaesthetics when vomiting is likely to occur.

4. Operative procedures.

Table IV shows the various operations used in this series with their mortality rates.

TABLE IV

Operations	Total	Died	Per cent.
Herniotomy, simple	47	12	25.5
Release of adhesions and bands, simple	16	1	6.2
Exploratory laparotomy	6	6	100
Enterostomy	19	14	73.1
Cecostomy and colostomy	6	5	83.3
Appendicostomy	1	0	0
Intestinal resection, large intestine	7	5	71.4
Intestinal resection, small intestine	12	8	66.6
Intestinal anastomosis, type not stated	4	4	100
Intestinal anastomosis, end to end, suture	3	2	66.6
Intestinal anastomosis, end to end, Murphy button	9	6	66.6
Intestinal anastomosis, lateral, suture	5	0	0
Intestinal anastomosis, end to side, Murphy button	1	1	100
Reduction intussusception	1	0	0
Reduction volvulus	4	1	25
Mikilicz, first stage, with colostomy	1	1	100

The operation must depend entirely on the pathological findings within the abdomen. That procedure which can be safely and easily done within the first twelve hours of the disease may become most difficult and dangerous after a lapse of forty-eight hours. The foregoing table shows that simple release of bands and adhesions before strangulation has occurred is an operation of comparative safety.

Enterostomy has failed to show the value numerous recent observers attribute to it, but this is probably due to the fact that its use has been mostly as a last resort. We recall several recent cases where its use, relatively early, has undoubtedly saved life. Enterostomy drain must tap the fluid containing segment, not that of greatest distention. The direction of fluid is toward the stomach, nature's attempt to relieve the condition. With stercoraceous vomiting do the enterostomy at the highest point available and usually reached through an incision to the left and just above the umbilicus, taking the first loop of gut that appears in the wound.

Intestinal anastomosis requires sound tissue on either side of the resection. In those cases with soft oedematous and friable intestinal wall it is better to bring both ends of gut out on the abdominal wall and do a secondary operation if the patient survives. In any case where doubt exists as to the integrity of the intestinal suture it is wise to do an enterostomy higher up to act as a safety valve and take the strain of post-operative distention off the suture line. There appears to be little choice as far as mortality is concerned between anastomosis by suture or Murphy button. We believe the Murphy button still has its indications and is not ready for the discard. It will be noted that in five cases with lateral anastomosis there were five recoveries.

Sir William Taylor[16] has classified the treatment in three stages of the disease. In the first twenty-four hours with the general condition good and very little intestinal distention, the stomach is washed out before and after operation, the cause of obstruction is removed, and the abdomen closed. During the second, third, or fourth day when the general condition is good but there is considerable intestinal distention and severe vomiting which may or may not be stercoraceous, he adds a high jejunostomy with post-operative irrigation of intestine through the tube with soda bicarbonate solution for several hours. The third stage is that in which the condition of the patient is bad and is treated by high jejunostomy under local anaesthesia, post-operative irrigation of the intestine with the soda bicarbonate solution and secondary operation for relief of obstruction if the patient survives.

As Mixter[14] has said, "It should always be remembered that in the late cases more lives are lost by doing too much than too little. Early operation is very easy and comparatively safe. In late cases the condition is a very fatal one and we shall always have a certain number of these desperate cases either from the objection of the patient to operation, the delay of the physician in charge or our own mistake."

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UNUSUAL DISPLACEMENT OF PATELLA, PATELLA TENDON AND TIBIAL TUBERCLE CORRECTED BY OPERATIVE REPOSITION

BY LOUIS A. O. GODDU, PH.G. M. D., BOSTON, MASS.

THIS patient twenty-one years of age comes to the office with his left knee in a hyperextended position. When he walks he throws the limb forward as a patient would with a toe-drop, and comes down rather hard, locking the knee a little back past center, that is hyperextended, in this way he has been able to get about for seventeen years. Presents himself with the desire of having some help relative to the knee condition if possible.

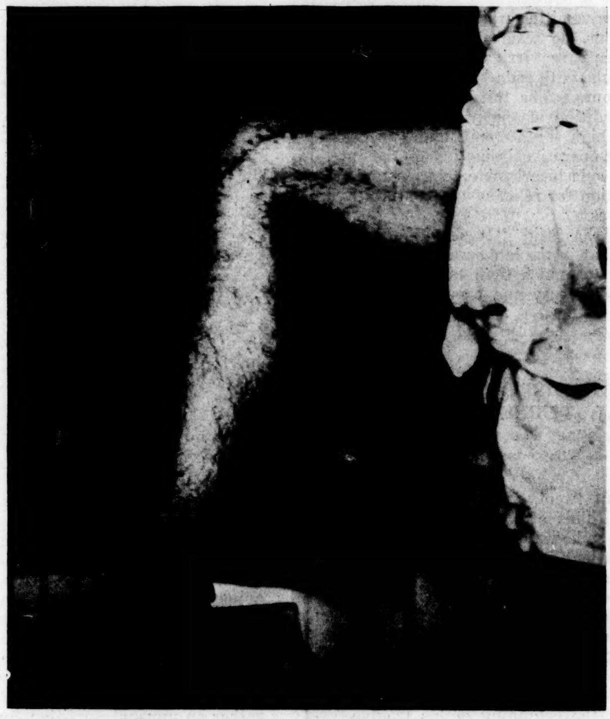
Relative to the history, the patient has little knowledge of the beginning of his trouble, except that he was told that at the age of four he had a bad fall, since which time he has been lame. A clinical examination showed that with the knee flexed attempts at extension contracted a lateral band, which was on the outer aspect of the thigh, with a prominence at lateral aspect of the external condyle of femur was brought out. A short band which seemed to be probably the patella tendon was also noticed, but there was no active motion of the leg in extension.

The clinical diagnosis seemed without a doubt a displacement of the tibial tubercle, patella tendon, patella and quadriceps femoris to the outer side, and that this man was able to get about by the hyperextension of his knee. Description of this can be readily seen by looking at plate No. 1.

The most probable deductions from the above examination seemed to be that this boy at the age of four undoubtedly received a fracture in the epiphyseal line, at which time the tibial tubercle became displaced, and likewise the patella and quadriceps femoris, and that the whole became reättached to the outer side. The writer recommended operation without promising the patient very much, in view of the fact that this was rather an unusual condition, and the writer had no particular previous similar condition to base a prognosis upon.

Operation—April 9, 1923. Incision was begun about five inches below anterior superior spine, extending straight down to the median aspect of the thigh, and about four inches above the end of the femur, the writer extended an incision in a sweeping curve downward and outward toward the insertion of the tibial tubercle in the tibia. The object of this incision the writer felt to be manifest, that is if he were able to bring up the patella, in fact transplant the whole in its entity, there would not be any scar over it to interfere with its function. The patella tendon and tibial tubercle were located and it seemed best to detach the tibial tubercle with the patella tendon with its insertion, therefore with the chisel and mallet the square block that represented the tibial tubercle was removed, this was lifted up and a careful dissection was made up to ligamentous mucosa, which was cut across underneath the patella tendon where it was attached to the patella. The patella exposed, then an incision was made down each side of patella allowing a lateral pedicle on each side of patella of one-eighth of an inch, this dissection was carried up on both sides of the patella to the quadriceps femoris, where the dissection was carried up on both sides of the muscles, this entire pedicle including the tibial tubercle, patella tendon, patella and quadriceps femoris was wrapped in hot-saline solution, gauze, and thrown backward and upward. Knee joint exposed, this opening of the capsule was then stitched together with interrupted chromic catgut. With the knee extended an incision was made in the median line of the capsule, patella laid in this opening with patella tendon and tubercle below. Unfortunately this long pedicle was not enough so that the tubercle could be transplanted in an area most to be desired, also with the tendency to a lateral displacement because of the abnormality of the condyle of the femur, it was found necessary to place the tubercle to the inner aspect of the upper end of the tibia, and higher than one would wish.

The cortex of the bone was denuded somewhat just below its articulation, and an attempt made to transplant the tubercle in this region. It was also found that within the capsule at its inner aspect the two capsular surfaces were to a great degree obliterated, and somewhat adherent. The patella was placed in the new center opening of this capsule, and the two edges of the capsule were brought up to the edges of patella on either side and sutured together. It was impossible for the writer to lengthen the pedicle for the reason that the circulation seemed to be taken from above, and to make an attempt to lengthen the pedicle at this time would have interfered with the nutrition of the same, therefore he felt that

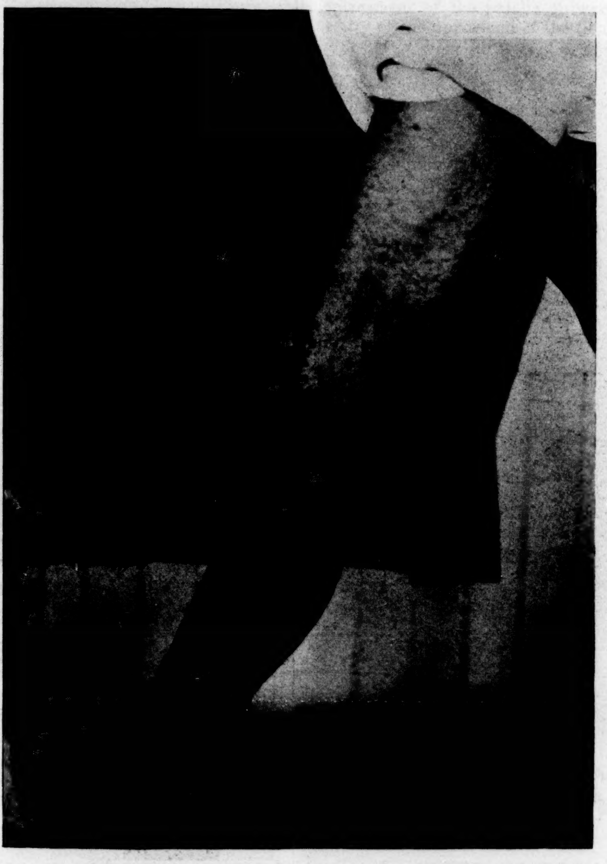


This picture shows degree of flexion, and the outside sweep of incision.

it was best to sacrifice the length at this time. Stitches removed and wound looks well, patient can move patella actively. Two weeks later had 25 degrees motion in the knee.

May 25, 1923—Patient walking frequently without crutches, developing strength in the quadriceps, can extend lower leg of own volition, amount of flexion is gradually increasing, necessarily limited because of the character of the operation. At this time the question came to the writer's mind, whether or not to give gas or ether manipulation because of adhesions, but it seemed best that this patient should not have any forced manipulation, but be allowed to increase strength as time went on, this procedure has been justified by the results.

June 4, 1923—Examination of knee showed marked improvement in the strength of the quadriceps tendon, patella moves freely, and the capsule seems much less thickened, tibial tubercle seems more firm.



This picture shows leg in full extension.

June 30, 1923—Patient has returned to work. Leg feels very much stronger and can now bend to almost right angle, a period of eleven weeks after operation; knee is feeling a little bit of strain in the internal lateral aspect of joint, which is undoubtedly due to knock knee and pronated foot. Writer recommended spiral strapping, plus Thomas heel on shoe, and if this is inefficient advised to have Whitman plates.

August, 1923—Patient states he feels more comfortable with some support. Can flex knee now to beyond right angle, approximately 10° farther. The clinical examination of the transplanted tibial tubercle showed there was not bony union, however this motion seemed more laterally than upward or downward, and it was reasonable to assume that the tendon was firmly attached to the subcutaneous soft tissue. The Thomas heel was efficient in the care of the pain in the region of lateral ligament.

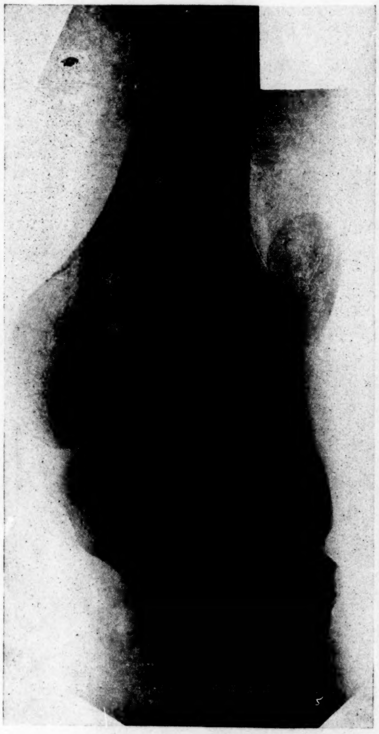


PLATE 1. Shows X-ray anterior-posterior view, showing definitely patella on the outer side of the femur, before operation.

X-rays taken at this time. This X-ray report is given in its entity, because it gives opportunity for discussion. The patella lying purposely somewhat to the inner line seemed consistent, inasmuch as an attempt was made to place it in this region because of the knock knee, and because of its former position, and also that it was reasonable to assume that there would be a tendency to an outward dislocation unless proper care was taken for its prevention.

The picture shows the limb in an extended position, also shows the lower portion of the incision as it swept to the outer side. There are two prominences, in the lower prominence the knee flexed shows the new position of the tibial tubercle, and upper prominence at the angle of knee shows the patella.

It would be interesting to note from the X-ray report that there is a diminishment in the calcified salts of the tibial tubercle, and a possibility of this being absorbed. The writer feels no apprehension relative to this happening, for the reason that undoubtedly the tendon has new attachment which is taking care of the situation.

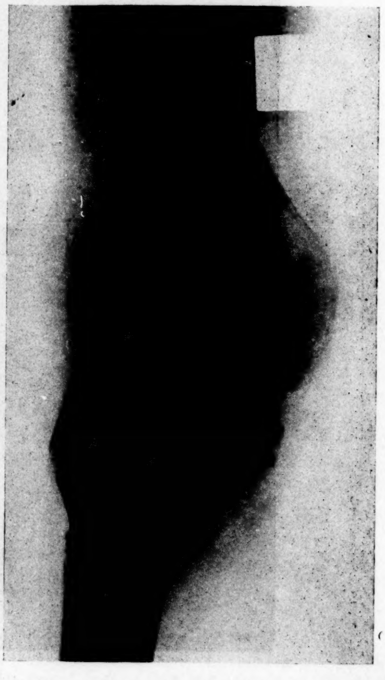


PLATE 2. Shows the area from which the tibial tubercle was chiseled off.

At the time that this case was shown March 31, 1924, examination of the knee showed that the knee was very much firmer, he was able to

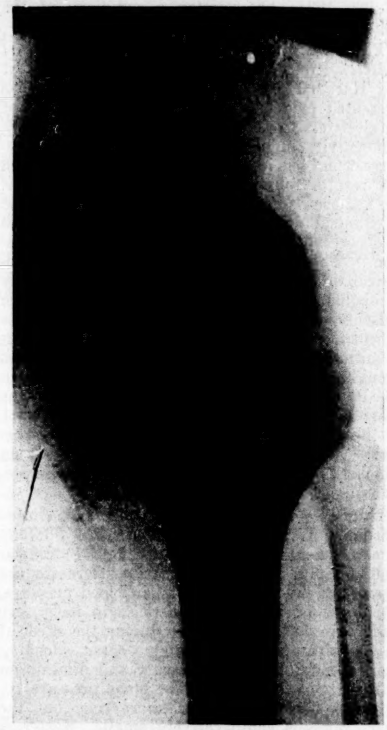


PLATE 3. Shows a lateral picture of the patella in its proper position, and likewise the transplanted tubercle just below the articulating border of tibia.

go up and down stairs on the knee, in fact there has been a very decided improvement.

Stereoscopic examination was made of the left knee. The regular antero posterior and lateral positions were also made.

Region examined: Left knee.

Films show an old injury to the knee with a displacement of the patella outward and a deformity of the upper end of the tibia.

The lower end of the femur shows some enlargement on its anterior surface, this lower end bulging forward more than we usually see it. The inferior surface of the condyles appear to be smooth and normal in every way and the intercondyloid fossa appears to be of normal depth. The cartilage on the inferior and posterior parts of the articulating surface seem normal in every way but it does not appear to reach up on to the front of the femur to what would normally be the patella surface.

The upper end of the tibia appears to be flattened and the shaft appears to join the upper end about an inch farther out than we would expect to see. This deformity has turned the weight-bearing line almost entirely through the external condyle of the femur and the external articulating surface of the tibia. The internal articulating surface of the tibia appears to be smaller than normal and is tilted downward rather than being flat. The tibial tubercle appears to be displaced toward the outer side of the tibia and is only seen in profile when the tibia is turned at an angle.

The patella was found lying outside the lower end of the femur and as far back as its posterior surface, but it appeared to be normal in outline but showed a marked lime atrophy.

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MEDICAL PROGRESS

PROGRESS IN THE STUDY AND TREATMENT OF CARDIOVASCULAR DISEASE IN 1924

BY HOWARD B. SPRAGUE, M.D.[*] AND PAUL D. WHITE, M.D.

THE literature on cardiovascular disease in 1924 is very extensive. The object of this review is to point out some of the most important work on the subject and to outline the significant advances that have been made. Somewhat more than 300 papers have been included in this survey and of course do not cover the entire field. The outline is approximately that used by one of us in the review of two years ago in the BOSTON MEDICAL AND SURGICAL JOURNAL (188:330, 1923).

1. ANATOMY AND PHYSIOLOGY

With the exception of several case reports of congenital cardiac anomalies and the work of Johnstone (*Bull, Johns Hop. Hosp.* 1924, 35: 87) on the embryonic chick heart, there is little of unusual interest on the anatomy of the cardiovascular system. There have been important contributions to physiology, however.

Nutrition of the Heart—Pratt has considered the factors involved in the circulation of the heart itself. (BOST. MED. & SURG. JOUR. 1924, 190:304.) He has called attention to the pos-

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[*] Dalton Scholar, Massachusetts General Hospital, 1924-1925.

sible nutrient streams (1) the coronary vessels and their branches, (2) the pulmo-systemic blood stream acting through the endocardium, (3) the sinusoidal or Thebesian system, and (4) the lymphatics. The latter supply needs further investigation. Although Gross has showed that anatomically the coronary vessels anastomose extensively, there is evidence to indicate that physiologically they act as end arteries, and Pratt suggests that this demarcation of the coronary supply may be useful in allowing one blood stream to exercise selective control over its particular chamber.

The Excitatory Process in the Heart—There has been considerable work done on the impulse formation in the heart. Frey (*Deutsch Zeitschr. f. Chirurg.* 1924, 186:168) found that the heart beat regularly and vigorously after the muscle was impregnated with different poisons which arrest the action of nerves and ganglia, and considered this direct proof of the myogenic origin of the heart impulse. Andrus and Carter (*Heart,* 1924, 11:97) working with perfused terrapin and dog hearts were able to control accurately, accelerate, retard, abolish and restore the development of the excitatory process and its propagation by changing the Ph of the perfusion fluid. They suggest that the rhythm and rate of conduction are normally determined largely by the Ph of the surrounding fluid and that the excitatory process is due to a disturbance of ionic equilibrium between cell contents and tissue fluid. Asher (*Klin. Wchnschr,* 1923, 2:2285) found that the frog's heart perfused through the liver beats more strongly and believes this is evidence of the chemical regulation of the heart. Tulgan (*Am. Jour. Physiol.* 1924, 69:441) has confirmed the findings in cats that after bilateral vagotomy the heart beats at its physiological maximum and cannot be increased by sensory nerve stimulation or injection of adrenalin. In a previous article (*Am Jour. Physiol,* 1924, 68:31) he found that after the vagi are sectioned an increase in heart rate may be obtained provided the heart is not beating at its physiological maximum. Demoor (Belgian correspondence, *Jour Am. Med Assoc.* 1924, 83:2033) recently announced that experiments have been made which show that a heart extract from another species may change the rhythm of the contractions in a heart that is perfused and beating regularly.

Haberlandt (*Klin. Wchnschr.* 1924, 3:1631) perfused frogs' ventricles with Ringer's solution which he had used for the sinus venosus and found that it accelerated them. He suggests that there is a sinus hormone present.

Byrne (*Am. Jour. Physiol.* 1924, 69:132) published a report on paradoxical cardiac inhibition following lesions of efferent vagal paths. Lowman & Laurens (*Am. Jour. Physiol.* 1924, 68:316) have worked on A-V conduction in the alligator. Lutembacher (*Ann. de Med. Paris,* 15:223, 1924) has written a summary of the factors involved in auricular rhythm.

Electrical and Mechanical Records of Heart Muscle—Einthoven in the Dunham lectures at the Harvard Medical School (Oct. 1924) has presented evidence to show that the theory of an electrical excitation wave preceding mechanical activity in heart and skeletal muscle is incorrect and has its basis in observations based on the results found with inadequate apparatus. He has been able to show that the electrical and mechanical waves are entirely synchronous and also correspond in amplitude as well as duration. This work is very important in its theoretical and practical applications, particularly in abolishing the idea of a "latent period" in muscular activity, and in making the amplitude of electrocardiographic waves more significant as an index of myocardial ability. He has also brought to the attention of cardiologists that the P wave of the electrocardiogram is not as short as it appears but is followed by a T wave of the auricle (the Ta wave of Hering). This wave can be seen in cases of heart block in which the auricular complexes can be separately studied.

Effects of Hemorrhage, etc. on Heart Size—Gordon & Wells (*Arch. Int. Med.* 1924, 33:738) in experiments with cats found that (1) inhalation of amyl nitrite temporarily decreases the size of the heart with the fall in blood pressure, (2) there is a transient increase in heart size with a rise in blood pressure during the effect of epinephrin, (3) immediately after bleeding there is a fall in blood pressure and diminution in the size of the heart. The blood pressure approaches normal within a short time but the heart remains comparatively small. Eyster & Middleton (*Am. Jour. Physiol.* 1924, 68:581) found that hemorrhage and transfusion in man, in amounts within 1 percent of body weight, result in only transitory alterations of cardiac size and blood pressure. Meek (*Am. Jour. Physiol.* 1924, 70:385) has studied the effect of changes of pulse rate on the diastolic heart size of dogs. He finds that in etherized dogs with intact thorax the diastolic heart size by X-ray slowly decreases as the rate rises from 0 to 110, and above 110 there is a rapid decrease.

Circulation Rate. Field and Bock (*Jour. Clin. Invest.* 1924, 1:65) have determined the cardiac output of 21 adult normals and find that it falls in Yandell Henderson's estimated amount of 1.5-2 cc per kilo per beat. There seems to be no correlation between blood flow and the physical type or athletic ability of the subject. Two methods are described. Burwell and Robinson (*Jour. Clin. Invest.* 1924, 1:87) present the results of a study of the gaseous content of the blood and the output of the heart in normal resting subjects.

Peripheral Circulation. Capillaries—Considerable work has been done in the past year on the capillary circulation. Lewis has continued his researches on the subject. He has concluded that the capillaries are very important circulatory regulators and that their potential power as such is not far from that ascribed to arterioles. (*Heart,* 1924, 11:109.) In aortic regurgitation he found that "capillary pulsation" is, in reality, (at least in face, trunk and arms) a pulsation of skin venules, due to the transmission of the wave through the capillaries from the dilated arterioles. (*Heart,* 1924, 11:151.) Boas states that clinical "capillary pulsation" is due to subpapillary and cutaneous vascular plexuses not to the capillaries of the papillae of the skin or mucous membranes. (*Heart,* 1924, 11:57.)

Lewis and Grant (*Heart,* 1924, 11:209) have published the results of their comparative study of the action of subcutaneous histamine and the response to injury in urticaria factitia. They both show local dilatation of the blood vessels and a local permeability of minute blood vessels. They conclude that the reaction of the skin in this condition is probably due to the release of a histamine-like agent. Uhlenbruck (*Zeitschr. fur Biol.* 1924, 80:35) has presented his conclusions on the effect of skin stimuli on vascular tone and finds that all stimuli—heat, cold, pressure, etc., cause vasoconstriction.

Pulse. Gillespie (*Jour. of Physiol.* 1924, 58: 425) has investigated the effect of mental and muscular work on pulse rate and blood pressure. He has found that mental work produces an increase in pulse rate and blood pressure which is independent of emotional factors and is not accounted for by movements of the articulatory muscles or by known muscle tensions. In combined mental and muscular work the increases are greater than with either alone. In female students the pulse rate increased twice as much as the blood pressure but in males, the proportionate increases were fairly similar.

Pulsus paradoxus has been the subject of a complete study by Gauchat and Katz. (*Arch. Int. Med.* 1924, 33:353 & 393). They find that it occurs with abnormal respiratory conditions and pericardial effusion. They present experimental work to support a theory that it is due to the variable effect of respiratory motion on the intra and extrapericardial pressures when there is pericardial effusion and when there is not.

Arteriovenous aneurysms have been investigated by numerous workers. Gerlach and Harke (*Klin. Wchnschr.* 1924, 3:980) produced a rise in blood pressure and bradycardia by compression of such an aneurysm, even with spinal anesthesia, proving that they are not reflex phenomena. They agree with Weber that the heart has to do more work with a communication between a larger artery and a vein. If the communication is interrupted the same effort of the heart raises the blood pressure. Bradycardia they believe is due to vagus action. Hoover and Beams (*Arch. Int. Med.* 1924, 33:1) also find that the heart is forced to do much more work in this condition. Holman (*Ann. of Surg.* 1924, 80:801) has especially emphasized the importance of the size of the arteriovenous fistula and the amount of blood flowing through it in determining the cardiovascular changes.

The most extensive research on this subject was undertaken by Lewis and Drury (*Heart,* 1923, 10:301 & 365) in the previous year. They found that arteriovenous anastomosis produced the signs found in aortic regurgitation—high pulse-pressure, collapsing pulse, capillary pulsation, etc. The heart rate was raised, but there was no increase in general venous pressure. There is enlargement of the heart which is mainly a dilatation, chiefly due to deficient nutrition of the heart muscle consequent upon a fall in mean arterial pressure.

Miscellaneous. Mechanism of Stasis—Boas and Dooniek (*Arch. Int. Med.* 1924, 33:407) in studying the mechanism of peripheral stasis in myocardial insufficiency favor the theory that it is due to weakened cardiac contraction, not "back pressure," thus agreeing with Mackenzie. Barry (*Am. Jour. of Physiol.* 1924, 58:362) has studied mitral insufficiency by experiments on dogs.

Death of the Heart—Willius (*Med. Jour. and Rec. Supplement,* 1924, 119:49) has found in the dying heart that the auricles always stop first—14.8 seconds to 8½ minutes before the ventricles, in his series.

Kahn & Goldstein (*Am Jour. Med. Sci.* 1924, 168:388) have also made observations on the death of the heart.

Angina Pectoris—Theories concerning the mechanism of angina pectoris continue to be advanced. Reid (*Arch. Int. Med.* 1924, 34: 137) believes that it is due to a failure of the normal reflex peripheral dilation which comes with exercise in the healthy heart. As a result there is an abnormlly high pressure in the first portion of the aorta during periods of activity, the heart is forced to contract against increased resistance and the left ventricle becomes fatigued more quickly.

Diuresis—Underhill & Kapsinow (*Jour. Am. Med. Assoc.* 1924, 82:9) have studied the effects of saline cathartics in conditions of dehydration. They find that, in conditions in which concentration of the blood occurs, the common saline purgatives fail to effect purgation and the blood concentration is not increased. When increased concentration of the blood is present, magnesium sulphate given by mouth will produce a general complete anesthesia lasting two or more hours. Death has occurred from depression of the medulla. These effects they were able to secure in experiments with starved and dehydrated dogs. They advise caution in giving magnesium sulphate.

II. ETIOLOGY AND PATHOLOGY

General—Woody (*Virginia Med. Month.* 1924, 50:784) has recently analyzed the death rate from heart disease among negroes. He finds that, in Kentucky for example, the death rate is twice as high as that in the whites. He explains this by the fact that the negro does harder manual labor and in general pays little attention to the treatment of acute infections, focal infections and venereal disease.

The relationship between chronic infections, arthritis and heart disease has been presented by Boas & Rifkin (*Jour. Am. Med. Assoc.* 1924, 82:1596). By a study of 80 cases of chronic arthritis they found that "about 45 percent of all patients with chronic multiple arthritis present organic lesions of the heart. 17 percent showed valvular lesions due to endocarditis." They consider that this supports the theory of the infectious etiology of arthritis deformans.

Allan in Scotland (*Glasgow Med. Jour.* 1924, 102:81) has studied the etiology of heart failure in 320 cases. In this series 242 were valvular cases and 78 were myocardial. It is of interest to note that evidence of syphilis was not obtained in any case of pure mitral stenosis or of combined mitral stenosis and aortic incompetence in either sex. Rheumatism was the most common etiologic agent of heart failure, syphilis second, and renal disease or arteriosclerosis third.

Baude & Delglaude (*Comptes Rend. de la Soc. de Biol.* 1924, 91:1116) in experiments on rats find that a diet which does not contain vitamine A has no effect upon the heart, as evidenced by study of the myocardium.

Congenital Heart Disease—Lemaire & Blechmann (*Nourrisson,* 1924, 12:29) have published an embryologic study of congenital anomalies. Abbott (*Internat. Am. Mus. Bull.* 1924, 10:111) has also described some new accessions. Many case reports of congenital abnormalities have appeared. An interesting one is described by Campbell & Coulthard (*Lancet* 1924, 1:1001) in which a man of 28 with pulmonary stenosis and double septum defect with livid cyanosis finally died of pulmonary tuberculosis after a 6 months' illness. Schuster & Paterson (*Proc. Roy. Soc. Med.—section Dis. of Child.* 1924, 17:11) secured a necropsy on an infant of 9 weeks that had attacks of paroxysmal tachycardia and cyanosis. The origins of the pulmonary artery and aorta were transposed; there was a patent ductus and septal defect and the right auricle received the pulmonary veins.

Canavan (*Jour. Am. Med. Assoc.* 1924, 82:716) describes an autopsy in a man dying of general paralysis in whom there was almost complete absence of pericardium. Rienhoff (*Bull. J. Hop. Hosp.* 1924, 403:271) publishes a unique case of multiple communications between the external jugular vein and the common carotid artery cured by operation.

The diagnosis of congenital heart disease is discussed by Owen & Kingsbury (*Brit. Jour. Child. Dis.* 1924, 21:161). They find that temporary systolic murmurs are not uncommon in the newborn, but they have not heard a diastolic bruit or the bruit of a pathologically patent ductus in the first few days of life. Premature beats are very rare and fibrillation has never been seen by them. They give a list of the pathological states which are confused with heart disease in the young infant.

The interesting anomaly of congenital mitral stenosis is reviewed by Donnally (*Jour. Am. Med. Assoc.* 1924, 82:1318) and a case reported, making a total of 12 in the literature. An infant, apparently well at birth, became suddenly dyspneic 43 hours later and died when 57 hours old. Necropsy showed hypoplasia of the left auricle and ventricle with rudimentary aorta and almost complete closure of the mitral valve. None of the reported cases have lived more than 3½ years. He raises the question as to whether minor grades of stenosis may not occur which are called "rheumatic" in later life.

Boldero and Bedford (*Lancet* 1924, 2:747) attempt an explanation of the occurrence of infectious endocarditis in congenital heart cases. They believe local thickening of the endocardium and increased local strain are factors in the onset. The access of arterial blood to the right heart may explain the relative frequency of dextral endocarditis.

Idiopathic cardiac hypertrophy in infancy is a condition of unknown etiology which has been reported in 20 cases. Carrington & Krumbaar (*Am. Jour. Dis. Child.* 1924, 27:449) add a new case and discuss the disease. The child was 10 months old, and the heart weighed 136 gm. instead of 35-40 gm. The left coronary arose from the pulmonary artery but this did not seem adequate cause for the rest of the cardiac abnormality. Myocardial fibrosis and mild nephritis were also suggested as etiologic factors.

Rheumatic Heart Disease—A paper confirming the familial incidence of rheumatic fever, chorea and rheumatic heart disease has been published by Faulkner & White (*Jour. Am. Med. Assoc.* 1924, 83:6). They considered as criteria of rheumatic infection (1) frank rheumatic fever with the involvement of several joints, (2) definite choreiform movements, or (3) definite evidence of mitral stenosis. In the 200 families of patients who had rheumatic infections, 71 (35.5 percent) had more than one member affected, or 8.79 percent of all the persons in these families. In a control group of 75 families 16 percent had rheumatic infections, or 2.95 percent of the members. 8.9 percent of 332 parents of children with recent acute rheumatic infections gave evidence of recent rheumatic infection, and 8.66 percent of the siblings were also infected. 97 children of 29 parents with inactive rheumatic infections showed no involvement. A comparison of the incidence of rheumatic fever in hospitals throughout the world showed a marked variation in geographical distribution with a tendency to relative prevalence in cold damp climates as is shown by the incidence of 4.7 percent in Glasgow, Scotland, as compared with 0.4 percent in Los Angeles. (The regional incidence in the United States has recently been verified by Harrison and Levine—(*South. Med. Jour.* 1924, 17:914.) Information from private schools indicated clearly that rheumatic fever is relatively very much less common in the higher social classes.

Denzer (*Jour. Am. Med. Assoc.* 1924, 82:1243) reports 3 cases of rheumatic heart disease in children under 2 years old. Either subcutaneous nodules or Aschoff bodies were found in each case.

Meleney & Kellers, writing from Pekin, (*Arch. Int. Med.* 1924, 34:455) describe 39 Chinese patients with mitral stenosis in whom there was only one case with a history of rheumatic fever, one with chorea and 14 with variable joint pains in the past. Necropsies in 3 cases confirmed the diagnosis. No other infections seemed involved and they resembled ordinary rheumatic cases in age, sex, electrocardiograms and pathology.

There have been important contributions to the pathology of rheumatic heart disease. Swift (*Jour. Exper. Med.* 1924, 39:497) gives a full account of the gross and microscopic findings. He finds two responses of the body to infection, proliferative and exudative. The proliferative type is represented by the subcutaneous nodule and resembles an infectious granuloma; the exudative lesion occurs in the periarticular tissues and attends the acute, febrile stage. This disappears with treatment, but the former lesions probably remain in other parts of the body as in the subcutaneous tissues. Pappenheimer & Von Glahn (*Jour. Med. Res.* 1924, 44:489) present the results of a study of the aorta in 77 rheumatic cases, 76 non-rheumatic cases and an equally large syphilitic series. They believe that the findings which are typical of rheumatic infection are (1) dense scars in the vicinity of the nutrient vessels, often acellular and (2) Aschoff cells or nodules in the adventitia. McCallum (*Bull. J. Hop. Hosp.* 1924, 35:329) has found, in several cases of a series, definite rheumatic lesions of the left auricle above the more posterior mitral leaflet, which resemble somewhat the lesions of streptococcus viridans but are really formed by new tissue. There is marked edema of these patches and infiltration with wandering cells. There are also numerous, large Aschoff bodies.

Abramson (*Ann. Clin. Med.* 1924, 4:327) adds a new case of ball thrombus of the heart (left auricle) in mitral stenosis to the 19 already reported.

Diphtheria Heart.—Warthin (*Jour. Infect. Dis.* 1924, 35:32) has reported the necropsy findings in 16 cases dying of diphtheria with reference to the myocardial lesions. He gives a full review of the literature and says, "the conflicting pathological descriptions given in the literature can be unified and the diphtheria heart given a definite entity of a primary toxic parenchymatous degeneration most frequently of a hyaline nature followed by a reparative inflammation (Myocarditis) with muscle regeneration. The histologic picture in any given case will depend upon the duration and stage of the infection, upon the degree of toxic injury to the muscle, the associated nutritional conditions, and the degree of muscle regeneration and accompanying fibrosis."

The clinical aspects of the heart in diphtheria were discussed in November 1924, by Dr. Edwin Place before the Boston Association for the Prevention and Relief of Heart Disease (now the New England Heart Association). His extensive experience makes this an important contribution. He emphasized the fact that patients who recover from the acute cardiac injury suffer no permanent damage to the heart, but that heart block was a sign of extensive cardiac involvement which was practically always fatal. Hecht (*Zeit. f. Kinderheil.* 1924, 37:5) however, in this connection, reports that the prognosis for cardiopathies is much better for scarlet fever than diphtheria. He says that the heart was found to be clinically sound in 66 percent of scarlet fever patients several years later, but in only 22.3 percent of diphtheria cardiopaths. He studied only 9 diphtheria cases and 6 scarlet fever cases, however, and his analysis of the data and his results are decidedly inconclusive.

Bacterial Endocarditis

Subacute bacterial endocarditis—An extensive analysis of endocarditis with special reference to the subacute bacterial type has been made by Clawson (*Arch. Int. Med.* 1924, 33:157) from a study of 220 cases. He draws attention to the frequency of embolic processes in bacterial endocarditis, especially the subacute form, and their absence in rheumatic cases. He also says that the presence of old embolic processes found at autopsy in cases with healed valves seems to indicate that bacterial forms of endocarditis not infrequently heal. (Libman, *Bull. de l'Academic de Medecine* 1924, 92:998, in an address in Paris has recently described such cases saying that he had seen at least 70 of them.) Clawson states that valvular ulceration is uncommon, but is most frequently seen in the subacute cases, and never in the rheumatic type. The streptococcus viridans in the blood stream is always evidence of subacute bacterial endocarditis, while the hemolytic streptococcus and the staphylococcus usually, but not always, mean the acute bacterial form.

Gracie (*Lancet*, 1924, 2:795) has made a clinicl study of 30 cases of subacute bacterial endocarditis from the standpoint of diagnosis.

He recommends longer convalescence after acute illnesses as a prophylactic measure. Behrens (*Ann. Clin. Med.* 1924, 3:158) reports 17 cases with 100 percent mortality in spite of all therapy. Stivelman (*Med. Jour. and Rec.* 1924, 120: 1 Supp.) describes a case complicating pulmonary tuberculosis. Graham, Oille, & Detweiler (*Assoc. Amer. Physicians,* May 6-7, 1924) have made a further report on 23 cases that had positive blood cultures of streptococcus viridans in 1915. Twenty are still living—4 in good health, 14 working, 1 losing ground and 1 chronic invalid. In 16 recently examined, 9 had a systolic murmur, in 4 a systolic mitral murmur had disappeared but an aortic systolic persisted, in 3 with two murmurs only one was now present. All these cases were in the same locality at the same time and the authors suggest that it was an epidemic outburst. These cases had few or no petechiae. In the discussion Libman said he had seen only 8 recoveries from subacute bacterial endocarditis.

The contributions to the pathology of this disease include a study by Grant (*Heart,* 1924, 11:9) of the lesions of the aorta which he believes come from direct surface implantations from the infected cusps; and the description by Libman of a new type of "verrucous endocarditis," with a report of 4 cases with negative blood cultures, white-centered petechiae, pericarditis and involvement of all 4 heart valves and mural endocardium. (*Arch. Int. Med.* 1924, 33:701.)

Locke (BOST. MED. & SURG. JOUR. 1924, 191: 913) has reviewed the literature of *pneumococcus* endocarditis and has added 4 cases. He says that the diagnosis should only be made by finding pneumococci in sections of heart valves. In his series of 150 cases dying of acute vegetative endocarditis, 14 were due to the pneumococcus. There seemed to be no relation to previous scarring of the valves by rheumatic infections. The 4 cases he reports were all due to Type 1 pneumococcus. The pericardium in pneumococcus endocarditis is involved in 50 percent of the cases, severe myocardial changes are relatively infrequent, valve lesions are vegetative rather than ulcerative. The valves of the left heart are most frequently affected but those of the right are more often attacked than in other types of endocarditis—tricuspid involvement being 20 times as common. The clinical signs include insidious onset, persistent toxemia and bacteremia, emboli, and irregular temperature often arising after a normal crisis. The duration in his cases was 12-98 days with an average of 41 days.

Thyroid Heart Disease—The diagnosis of early hyperthyroidism has helped to clear up certain diagnostic problems. Levine & Sturgis (BOST. MED. & SURG. JOUR. 1924, 190:233) report 5 cases of paroxysmal auricular fibrillation that had been treated for heart disease. Exophthalmos and appreciable thyroid enlargement were absent. They were cured by treatment of their thyroid condition. Eyster (*Wisconsin M. J.* 1924, 23:7) also advises a careful lookout for thyroid disease. In 20 patients with early hyperthyroidism, average age 20, the principal complaint in 15 was palpitation, and pronounced shortness of breath in 11. He outlines the most frequent cardiac signs and gives the results of the analysis of 4 groups—early hyperthyroids, doubtful cases, normal cases and effort syndrome patients.

Hamilton (*Jour. Am. Med Assoc.* 1924, 83:6) has recently analyzed 50 cardiac cases, in a period of 4 years, from a series of 900 thyrotoxic patients operated on by Dr. Lahey. He gives a full description of a typical case of thyroid heart disease with congestive failure, and describes the unique results of operative treatment. Of 11 patients operated on since Jan. 1, 1924, all but one are doing well. All other patients operated on before Jan. 1 have gone for an average of 20 months without a return of failure. All cases with paroxysmal fibrillation have stopped having attacks, and more than 1/3 of the cases of established fibrillation have returned to normal rhythm. Lahey & Hamilton (*Surg. Gyn. & Obstet.* 1924, 39:10) discuss thyrocardiacs from a surgical point of view and say that "there is no comparable condition in which persistent heart failure is consistently and safely cured by surgical measures."

Dameshek (BOST. MED. & SURG. JOUR. 1924, 190:487), Wilson (*Jour. Am. Med. Assoc.* 1924, 82:1754), & Dunhill, Fraser & Stott (*Quart. Jour. Med.* 1924, 17:326) have given valuable discussions of the heart in thyrotoxicosis.

Syphilitic Heart Disease—Wittgenstein & Brodnitz (*Munch. Med. Wchnschr.* 1924, 71: 131) have published the figures from 40,000 cases of Goldscheider's Clinic. 8 percent had diseases of the heart and blood vessels and 1/5 were of syphilitic origin. Three-fourths of the cases of aortic insufficiency were syphilitic, the average incubation period being 20 years.

Willius & Barnes (*Minn. Med.* 1924, 7:227) note the late diagnosis of luetic aortitis. In 140 cases, 7 percent were early, 21 percent moderately advanced and 71 percent advanced.

Scott (*Arch. Int. Med.* 1924, 34:645) studied 25 autopsies of cases of syphilitic aortic insufficiency. All had mesaortitis, and hypertrophy and dilatation, chiefly of the left ventricle. One in four had some grade of coronary occlusion. "It was suggested that the progressive widening of the aortic orifice, either from leaflet involvement or ring dilatation, and occlusion of the coronary arteries are the chief factors responsible for the relatively short duration and uninterrupted progression of the heart failure observed in these patients."

The effects of early syphilis have been observed by Amelung & Sternberg (*Arch. f. Klin. Med.* 1924, 145:34). Approximately ½ of

275 patients with early syphilis who were repeatedly examined, and some followed for years, showed heart and blood vessel abnormalities—21 percent due to syphilis. These abnormalities were anomalies of the pulse, heart murmurs and dilatations of the heart. There was no proof that these become the lesions of tertiary lues but they believe it probable.

Johannsen (*Acta Paediat.* 1924, 3:419) describes a condition of myocarditis found in congenital syphilis in which sudden death may occur.

Bickel controverts the idea that syphilis is almost always the cause of Stokes-Adams Syndrome. In 7 cases only one had any possibility of being luetic and the only sign in that case was a positive Wassermann. The others were arteriosclerotic. Goodall in 20 cases of heart block found one syphilitic and Gallavardin reports only 10 percent luetic. (*Arch. d. Mal. d. Coeur,* 1924, 17:744.)

Howard (*Am. Jour. Med. Sci.* 1924, 167:266) & Reid (*Am. Jour. Syph.* 1924, 8:609) make a plea for the prevention of syphilis, and the early recognition, prolonged rest and prolonged treatment of cardiovascular syphilis. Ridge (*Ann. Clin. Med.* 1924, 2:374) also discusses the condition.

Aneurysm—The most comprehensive study of aneurysm of the thoracic aorta has been made by Boyd (*Am. Jour. Med. Sci.* 1924, 168:654). He has analyzed 4000 reported cases from all points of view and furnished much valuable data. Benjamin & Wiedemer (*Ohio State Med. Jour.* 1924, 20:5) have presented the results of a study of 61 cases of aneurysm admitted to the Cincinnati General Hospital from 1917-1923. 86 percent were of the thoracic aorta. The average age was 48.

Fitz (Bost. Med. & Surg. Jour. 1924, 191:521) reports a case of intracranial aneurysm. The patient suffered from attacks of syncope with subhyaloid hemorrhage. Necropsy showed an aneurysm of the internal carotid displacing the optic chiasm.

Rowlands (*Brit. Med. Jour.* 1924, 2:939) publishes the diagnostic and operative findings in a case of aneurysm of a branch of the renal artery. The striking feature was sudden, profuse, painless hematuria.

The first case of a single, sacculated, mycotic aneurysm is reported by Benjamin & Lachman (*Jour. Am. Med. Assoc.* 1924, 82:1861). A woman of 24, who was said to have had heart disease since childhood, complained of a pain in one leg extending from trochanter to foot. A mass over the gluteal region was aspirated and a pure culture of streptococcus viridans recovered. Necropsy revealed an aneurysm of the gluteal artery. Mycotic aneurysms of this nature are typically multiple. Reifenstein (*Am. Jour. Med. Sci.* 1924, 168:381) describes two interesting cases of mycotic aneurysm of the aorta due to the gonococcus and pneumococcus.

Whitman & Stein (*Jour. Med. Res.* 1924, 44:579) have published an account of a case of dissecting mesa-ortitis in a woman of 76. The large aneurysmal sac contained no blood but lymph. Krukenburg has explained this as due to the passage of fluid from the vasa vasorum.

Arteriosclerosis—A complete study of arterial changes has been made by Monckeberg (*Klin. Wchnschr.* 1924, 3:1473) and a concluding report published. His findings are that arteriosclerosis is a complex process consisting of degenerative deposits of lipoids and regenerative proliferation. Each may occur alone but they are usually coincident. Degeneration is due to a disturbance of the metabolism of cholesterol which does not necessarily cause an increase in its concentration in the blood. Functional factors (hypertension) may contribute even to this degenerative part of the arteriosclerosis.

Oertel (*Northwest Med.* 1924, 23:339) has also considered the histogenesis and nature of arteriosclerosis. His conclusions are that the thickness of the arterial wall depends on two factors (1) the velocity of the blood current, more particularly of the peripheral zone, that is, the blood in contract with the intima, (2) the elastic tension of the vessel wall. Alterations of this relation lead to a structural response on the part of the vessel wall.

Lange (*Virchow Arch. f. path. Anat.* 1924, 248:463) submits the idea that structural changes in the arteries are caused by nutritional disturbances in the vessel walls occasioned by stimulation of their nerve supply.

A series of autopsies at the Elizabeth Hospital in Vienna has been analyzed by Schubert (*Wein. Klin. Wchnschr,* 1924, 37:752). He finds such a constant age incidence curve of atherosclerosis as to suggest that it is almost a physiologic accompaniment of age.

Reid has studied the effects of partical occlusion of the aorta with silk sutures and complete occlusion with fascial plugs to find the effect of ligatures on the arterial wall. (*Jour. Exper. Med.* 1924, 40:289).

Angina Pectoris—One of the most important contributions on angina pectoris during the past year is that of Wenckebach (*Brit. Med. Jour.* 1924, 1:809). He outlines the diagnostic features of the disease and the factors provoking an attack. He stresses the fact that after coronary embolus a patient never fully recovers, he is a "broken man." He is usually without pain thereafter but suffers from weakness of his cardiac muscle. In discussing the theory of angina he subscribes to Albutt's view of its origin in the aorta and says that the theory of coronary spasm is without evidence. In outlining treatment he described relief from cutting the depressor nerve. The paper was discussed by Sir Clifford Albutt.

Gallavardin from a study of 450 cases of anginal pain on exertion found that angina was syphilitic in all cases with aneurysm, 90 percent of cases with aortic insufficiency, and in 33 percent of cases with aortic disturbance under 50 years of age. (*Presse Med.* 1924, 32:598.) He also found that, including the non-smoking women, fully 50 percent of his total cases of angina pectoris (200) tobacco could not be incriminated. (*Presse Med.* 1924, 32:622.)

Hamman (*Am. Jour. Med. Sci.* 1924, 168:786) gives an account of the factors involved in the prognosis of angina and the difficulty of any statistical survey of mortality, each case being necessarily judged on its own merits.

Coronary Disease—Gordinier (*Am. Jour. Med. Sci.* 1924, 168:181) has given such a clear outline of the diagnostic points in coronary arterial occlusion that they are worth quoting. He reports 13 cases of which 5 were fatal with 1 necropsy. His typical picture includes: (1) Severe anginal pain substernal or upper abdominal. (2) Pinched ashen gray or very pale facies. (3) Acute emphysematous distension of the lungs with rales at the bases. (4) Easily compressed, rapid, thready pulse with almost any arrhythmia. (5) Sudden dropping of systolic blood pressure. (6) Cardiac impulse if palpable is diffuse and feeble; distant heart sounds with tic-tac or gallop. (7) Localized, evanescent, pericardial friction-rub, coming a few hours or a day or so after the onset, missed if posterior. (8) Fever of short duration and mild type with polymorphonuclear leucocytosis. (9) Inversion of the T wave with arborization block.

A series of 86 unselected, consecutive, proved cases of coronary sclerosis was studied by Willius to determine the frequency of occult coronary disease. (*Am. Jour. Med. Sci.* 1924, 168:165.) Death occurred from gradual cardiac failure in 13 cases, after surgery in 21 cases, and from other causes 22. Sudden death occurred in 32 cases. Of 25 that had electrocardiograms 17 showed abnormalities: (1) significant T wave negativity in isolated and combined derivations—12 cases, (2) auricular fibrillation with significant T wave negativity—2 cases, (3) uncomplicated auricular fibrillation—1 case, (4) auricular flutter—1 case, (5) ventricular tachycardia—1 case.

Myocarditis—A careful survey of the condition of the myocardium in non-infectious myocardial failure has been made by Clawson (*Am. Jour. Med. Sci.* 1924, 168:648), based on a study of 102 hearts. He concludes that the only anatomic changes are coronary sclerosis and myocardial fibrosis. Coronary sclerosis was present to a serious degree in 22.5 percent. Myocardial fibrosis is usually due to coronary sclerosis but occasionally rheumatic infections may give rise to a slight degree of fibrosis. Myocardial failure is rarely due to anatomical changes in the myocardium. He regards it as an exhaustion of the cardiac muscle. True chronic inflammation of the myocardium is very rare. What is commonly called "chronic myocarditis" is usually myocardial fatigue. Approximately one-half of the cases of myocardial failure show no anatomical changes in the heart muscle and the anatomical changes that do occur in heart muscle are seldom sufficient in themselves to cause death.

McCulloch (*South. Med. Jour.* 1924, 17:639) states his belief that myocardial changes not due to rheumatic fever but from absorption from tonsils and nose in children may be followed by complete recovery.

Mordre (*Norsk Mag. f. Laegevidensk,* 1924, 85:722) describes a case of the rare diffuse interstitial myocarditis mentioned by Aschoff & Kaufmann. A man of 41 began to have precordial burning sensations on exertion, and then, while he was at rest, cough and sputum appeared. In two weeks he was admitted to the hospital pale and cyanotic, with rapid heart and subnormal temperature. He died in two days. Necropsy showed hypertrophy and dilatation of the heart with acute interstitial inflammation. No bacteria were found on section of the heart muscle.

"Athletes Heart"—Burgess, Levine & Wilmaers (*Arch. Int. Med.* 1924, 33:425) observed a group of Marathon runners after a 25-mile race. The average vital capacity decreased 17 percent. X-ray of the hearts in 22 showed them all to be rather small. One hour later observations in 6 cases showed an increase of 1 cm. in diameter. The diastolic blood pressure was reduced but the systolic was normal. No rales were found in the lungs. There was no palpable liver enlargement.

Herxheimer (*Klin. Wchnschr.* 1924, 49:142) reviews the literature and gives figures of the ratio of heart volume to body weight in various classes of professional athletes. He finds that certain athletes have cardiac hypertrophy but this is related to the duration rather than the severity of the exercise. It was only the professional cyclists, ski-runners, and oarsmen that showed any definite hypertrophy.

Effort Syndrome—Chadbourne (*Colorado Med.* 1924, 21:10) publishes some instructive figures on 500 cases referred for cardiac examinations from the Veterans' Bureau. Of this group 183 had organic heart disease, 161 had so-called "functional hearts"—84 of whom had neurocirculatory asthenia (effort syndrome): and 156 had no heart diesase. "Myocarditis" was a frequent incorrect diagnosis. Brooks (*Ann. Clin. Med.* 1924, 3:11) gives a good review of neurocirculatory asthenia.

(Continued in next week's issue)

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THE Malaria Commission of the League of Nations Health Organization ended its sessions at Geneva on March 30, after the nomination as corresponding members of Dr. Samuel Taylor Darling, Professor Brumpt of France, and Colonel Christophers of England.—*Science.*

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 11171

MEDICAL DEPARTMENT

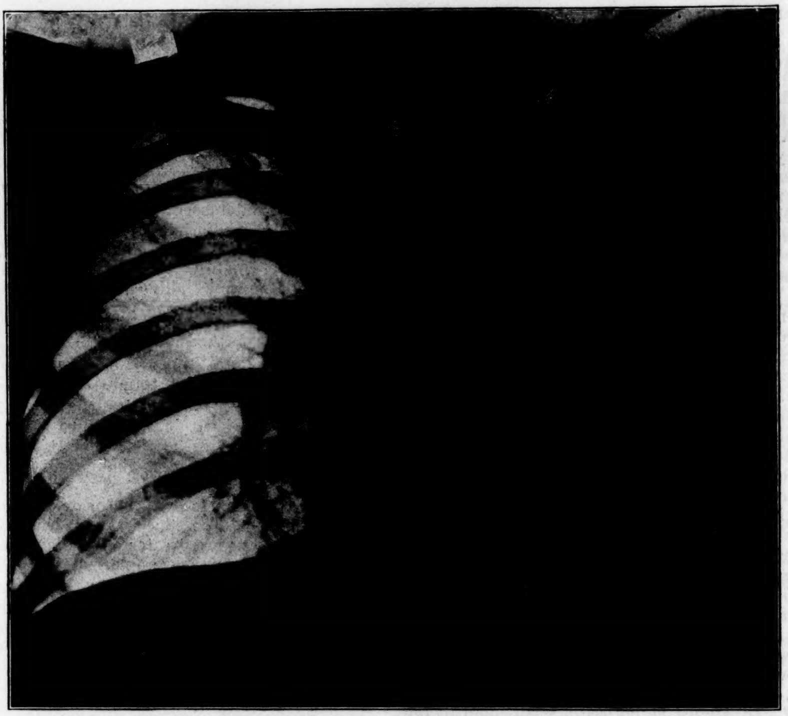
A Finnish laborer of thirty-six entered January 19 complaining of pain of five months' duration in the lumbar region and occasionally in the cervical region and jaundice of three weeks' duration. He had been in Massachusetts eleven years, but spoke no English. Although the history was taken through an interpreter it seemed reliable. The patient did not know about the diseases of his childhood. He had always been strong and vigorous and had never been ill except for gonorrhea at twenty-six, well treated. During the past year he had had occasional night sweats.

In April, nine months before admission, after spending the winter chopping in the woods, he developed a severe non-productive cough which lasted three weeks. He then began to have asthmatic attacks and was wheezy all the time, more so at night, so that he spent many nights sitting up. He could not run or walk fast without dyspnea. During the summer he did light work. In August the asthma improved, but he began to have severe pain in the back, especially in the lumbar region, occasionally in the cervical back, with stiff neck, especially when he lay down. The severity of the pain obliged him to stop work. He had spent the five months' interval mostly in the house, exercising very little. Amateur massage gave only temporary relief. In August he noticed a small lump in the right axilla and soon afterwards a small superficial tumor near the umbilicus. Later others appeared in the neck and groins. All slowly increased in size. Three weeks before admission he became hoarse and jaundiced. For the past three days his skin had itched. The pain in the back had grown steadily worse and kept him awake at night. He felt nauseated much of the time. January 9 after drinking coffee he vomited about a teaspoonful of bright red blood. He passed the week before admission in a hospital in a small town. He believed X-rays showed a "crack" in his spine and that his left lung was "not found at all." A year before admission he weighed 155 pounds, his best weight. He now weighed 125 pounds. He thought most of the loss had occurred in the past four months.

Examination showed a muscular man with evidence of loss of weight, marked jaundice, slight cyanosis, questionable pallor and marked hoarseness. The teeth were ill-kept. The tonsils were large and cryptic. Moderately hard glands were felt in both sides of the neck, a rather large superficial rounded hard mass in the right axilla and another just at the edge of the sternum, one gland in the right epitrochlear region and glands in both groins. The spine showed scoliosis. The apex impulse of the heart was seen and felt in the fifth space 9½ cm. to the left of the midsternum, one cm. outside the midclavicular line, corresponding with the left border of dullness. The great vessels appeared to be pushed somewhat to the left. There appeared to be some increase in the substernal dullness. It was however difficult to map out the left side of the heart and the area of substernal dullness because of flatness throughout the left chest. In the second left interspace 5 cm. from the midsternal line was a diastolic thrill. Pulsations were also seen at this space. The heart sounds had a chugging quality. At the pulmonic area was a systolic murmur tailing off into a double pulmonic second, which was increased because of pressure of the heart against the chest wall. The blood pressure was 122/80. The right front was hyperresonant, with exaggerated breath sounds. The back showed dullness at the apex and bronchial breathing. The left chest showed flatness front and back, bronchial breathing at the top down to the second rib, below this diminished sounds, absent voice, diminished tactile fremitus and no breath sounds. The liver dullness extended eight to ten centimeters below the costal margin. The edge was not definitely felt. The reflexes were greater on the left than on the right. The pupils were normal.

The temperature was 97° to 100.4°, with a terminal rise to 104°. The pulse was 90 to 128, the respiration 20 to 31. The output of urine was normal, the specific gravity 1.020 to 1.010. There was a very slight trace to a trace of albumin at both of two examinations, large amounts of bile and some leucocytes at both. The hemoglobin was 85 to 60 per cent., the leucocytes 16,000 to 11,700, polynuclears 83 to 72 per cent., reds 3,680,000, with slight achromia. At one examination an occasional cell showed basophilia. A Wassermann was negative. The bleeding time was four minutes at one test. The clotting time was 19 to 4½ minutes, with calcium chlorid 12 minutes.

X-ray January 22 showed uniform dense dullness throughout practically the entire left chest. The heart shadow was entirely obliterated and appeared to be retracted to the left. None of it was visible to the right of the spine. The shadows of the ribs were faintly visible, better defined toward the periphery and the apical region. The apical region was slightly more radiant than the lower portion of the chest, but the lung markings were nowhere visible. Just above what appeared to be the outline of the diaphragm was a shadow of diminished density which suggested a small air space above the outline of the diaphragm and below the shadow of increased density in the chest. The right lung field was of unusual brilliancy throughout and there was no definite evidence of pathology on this side of the chest, although the brilliancy represented a compensatory emphysema. The outline of the diaphragm on the right side was normal, the excursion good. The excursion could not be visualized by fluoroscope. The eleventh and twelfth dorsal vertebrae were less dense than the adjoining vertebrae and had a somewhat mottled character. The intervertebral space was maintained. The bodies of the vertebrae appeared somewhat narrowed.



CASE 11171. Plate I. Shows uniform dense dullness throughout practically the entire left chest. The heart shadow is entirely obliterated and appears to be retracted to the left. None of it is visible to the right of the spine. The shadows of the ribs are faintly visible, better defined toward the periphery and the apical region. The apical region is slightly more radiant than the lower portion of the chest, but the lung markings are nowhere visible. Just above what appears to be the outline of the diaphragm is a shadow of diminished density which suggests a small air space above the outline of the diaphragm and below the shadow of increased density in the chest. The right lung field is of unusual brilliancy throughout and there is no definite evidence of pathology on this side of the chest, although the brilliancy represents a compensatory emphysema. The outline of the diaphragm on the right side is normal.

Orders:—January 19 veronal gr. x, morphia gr. 1/6, repeat once if necessary. January 20 triple bromides gr. xxx, aspirin gr. xx, codeia gr. ss by mouth, repeat once if necessary. January 21 and daily thereafter morphia gr. 1/6 once, or repeated if necessary once to every four hours. January 22 aspirin gr. xx p. r. n. for pain, codeia gr. ss, repeat once if necessary, low fat diet. January 23 aspirin gr. x, triple bromides gr. xl. January 25 luminol gr. iss. January 26 nothing by mouth, rectal tap water 5 per cent. glucose ℥ viii every four hours.

January 20 Dr. Lord found in addition to the other lung signs dullness in the left base in front and increased tactile fremitus at the left apex posteriorly. January 21 biopsy was done, removal of a nodule from the abdominal wall.

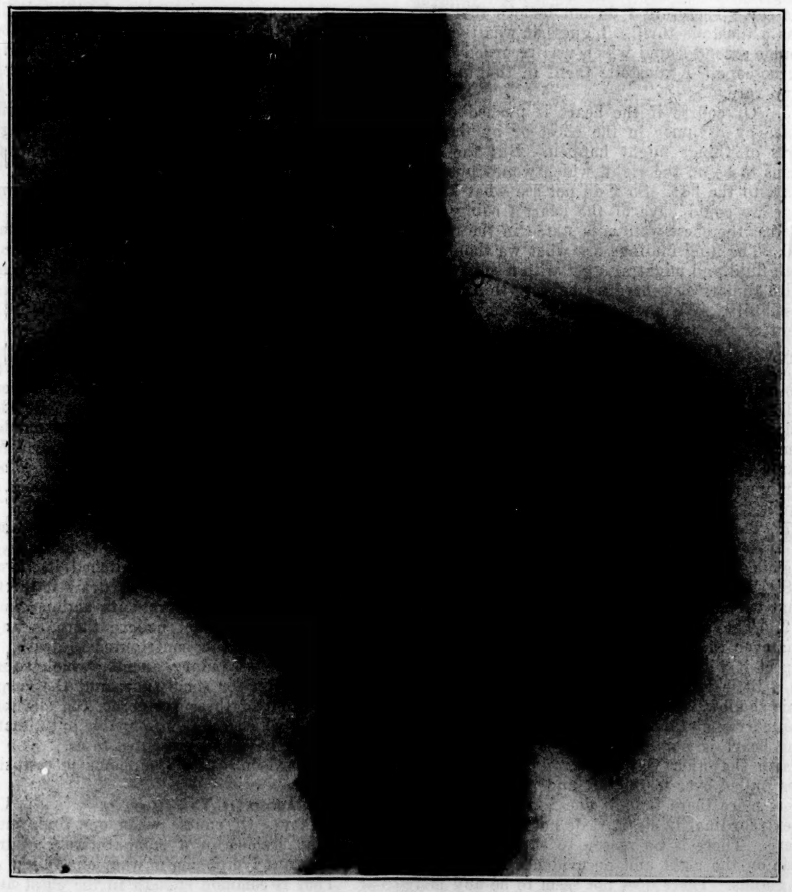
The morning of January 26 the patient developed symptoms of complete esophageal obstruction. That evening he very suddenly died.

DISCUSSION

BY DR. RICHARD C. CABOT

NOTE ON THE HISTORY

Taking these internal tumors as obvious certain things, we can work backward and suspect that the pain in the back and the cough may have been due to internal nodes of the same kind. Of course we cannot do much on that X-ray. If we had to guess from this history I think we should say Hodgkin's disease or something like it, with multiple internal tumors corresponding to the external tumors. But of course we know very little about the cause yet.



CASE 11171. Plate II. The eleventh and twelfth dorsal vertebrae are less dense than the adjoining vertebrae and have a somewhat mottled character. The intervertebral space is maintained. The bodies of the vertebrae appear somewhat narrowed. The negative is defaced.

NOTES ON THE PHYSICAL EXAMINATION

1. Unfortunately nothing is said about the size of these glands, but obviously they were thought to be more than occurs within normal limits.

2. "The great vessels appeared to be pushed over somewhat to the left." That I suppose was an inference made from the percussion dullness over the sternum, a pretty dangerous inference.

3. Flatness in the left chest was presumably due to fluid, the only thing which regularly gives us flatness, fluid in all probability due to malignancy.

4. We notice that there is no diastolic murmur. That makes me doubt very much whether there is a diastolic thrill. A vibration which can be perceived by the hand must be perceived by the ear. Therefore I do not believe that there was a diastolic thrill. I guess it was the same double second sound which was recorded by the stethoscope. A diastolic thrill in that place is very rare.

5. Of course if the heart is pushed out of place by a tumor in the chest or by fluid all sorts of things might happen. But the fluid seems to be on the right, which would push the heart to the left. So I do not see what knowledge we could have of the heart's being there against the chest wall as is stated in the record.

6. The lung findings are what we should get with fluid and might also get with a solid tumor. With tumors elsewhere we have to think of the possibility. We have to think of the displacement of the heart. Fluid is a great deal more likely to displace the heart than a solid tumor is.

Miss Painter: The attending physician thought the heart was not displaced.

Dr. Cabot: If the heart is not displaced the lesion would be much more likely to be a solid tumor. Fluid causing so much flatness would displace the heart and displace it so that ordinarily one could feel it in the region of the right nipple.

7. The hemoglobin declined presumably while he was here. The blood shows a secondary anemia.

8. With jaundice this clotting time is about what we expect.

9. The notable thing in the X-ray is that whatever radiance there is is where we do not expect it with fluid. With fluid there is apt to be a little radiance where the relaxed lung is. This shadow is extraordinarily dense in a position corresponding in a general way to the lung. The heart is not displaced. If anything it is drawn the other way. I should say the heart was pulled over to the left and that it ought to show more there than it does. The right chest is extraordinarily clear. I do not see any disease there. There is no reason to suppose tuberculosis on the right and no evidence of tumor or of glands. There does not seem to be any more than the normal amount of opacity at the right root. So that I should think that meant a solid mass in the left lung, very possibly with fluid, but not fluid alone.

10. It is somewhat of an Irish "bull" to say that the heart shadow was obliterated but appeared to be retracted. But we see that they mean there were no signs of it on the right of the sternum in its usual position, therefore presumably it was drawn over on the left side.

The absence of lung markings mentioned in the X-ray record is a point that I had not thought of. I do not know whether one would expect to see lung markings where we have as little radiance as this.

Dr. John D. Camp: The second plate does not show any marked change in the vertebrae described, but in view of the clinical findings very slight changes might be of some significance. These two vertebrae were less dense than those directly above and below them. The width of the eleventh and twelfth vertebrae appears to be less than the width of the vertebra above them, and that is an important point in distinguishing pathology in the bodies, because roughly the vertebrae should increase in size as we go down toward the sacrum, and if they do not it is looked upon as having some diagnostic significance. It might mean an early metastasis. I admit that it is a very slight change; but inasmuch as that is what they were looking for I think it might be important. The other X-rays are negative.

Dr. Cabot: The orders are for pain.

DIFFERENTIAL DIAGNOSIS

What suggestions have we as to the site of the malignant disease which we have been mentioning all along? The previous X-ray. Besides the lung we have hoarseness, cough presumably due to pressure on the trachea or bronchi. We have jaundice which suggests pressure either in the liver or in the bile passages leading out of it. We have, finally, esophageal obstruction.

The relation of this tumor to the heart and pericardium is of some interest. It looks as if whatever there is must have hitched itself up with the heart so as to push or draw it to the left and I suppose embarrass its action somewhat, although I do not believe there is anything to show that this contributed to death.

There is the secondary anemia which seems to have gone on for some time, and the suspicious condition of these vertebrae, the eleventh and twelfth, which I am quite unable to estimate, but which we have had presented to us.

Dr. Richardson, can a lymphoma metastasize into bone?

Dr. Richardson: Yes.

Dr. Cabot: Of course when one finds multiple gland lesions in a comparatively young man malignant lymphoma is what one thinks of first. That is common enough in the chest and mediastinum, and I do not know that I can make any better diagnosis.

There is no reason to suppose this is leukemic. The spleen is not enlarged. The blood is not in any way characteristic. Is there any possibility that this could be syphilis? We have a very extensive lesion in one lung and none in the other, which Dr. Post used to believe was more or less characteristic of syphilis. Enlarged glands of course can be produced by syphilis in the situations mentioned. But with syphilis I do not see why he should have died, and I never heard of esophageal obstruction from syphilis. On the whole I think that is rather a far-fetched guess.

The same is true of tuberculosis, which can produce lesions in all these different places but would not account for death without evidence of suppuration.

So I think this clearly enough is neoplasm, and if I am asked what, I have no better guess than malignant lymphoma.

Dr. Richardson: Was there any X-ray of the skull?

Dr. Cabot: I think not. We have no evidence so far of metastasis to bone other than the one in the spine, if it is metastasis.

INTERPRETATION OF X-RAYS

The changes in the left chest represent a pathological process with retraction of the heart toward the left and partial collapse of the left lung. The increased radiance of this shadow near the periphery of the chest and toward the base does not suggest a great deal of free fluid. Malignant disease should be considered. A film of the lower humerus and upper half of the forearm shows no definite evidence of metastasis. The changes in the vertebrae are somewhat suggestive of a pathological process, probably metastatic.

PATHOLOGICAL REPORT JANUARY 21

A small nodule largely composed of fat, showing on microscopic examination metastatic carcinoma made up of small undifferentiated cells.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Malignant lymphoma.
Tracheal obstruction.

DR. RICHARD C. CABOT'S DIAGNOSIS

Malignant disease, probably lymphoma, of the left lung, involving the mediastinum and the biliary passages, with compression of the respiratory structures and of the common bile duct.

ANATOMICAL DIAGNOSIS

Carcinoma of the pancreas with metastases in the retroperitoneal, mesenteric, bronchial, tracheal and axillary lymph-glands, and in lungs, adrenals, kidneys and abdominal wall and skull.
Hydrothorax, left.
Slight hydropericardium.
Compression atelectasis, left lung.
Purulent bronchitis, left.
Edema of right lung.
Icterus.
Operation wound.
Slightly defective closure of the foramen ovale.

Dr. Richardson: The dura showed a yellowish tinge, presumably icterus. The pia was wet. On the outer surface of the skull, the posterior parietal portion, a little to the right of the median line, there was a small grayish area. Cross section showed a small mass which looked like new growth tissue. There was some necrosis, and the mass extended into and nearly through the skull. It turned out to be a mass of metastatic new growth tissue. The brain tissue was wet but otherwise negative.

The skin, mucous membranes and conjunctivae showed a greenish yellow tinge.

The abdomen was not distended. About six cm. above the umbilicus was a recently healed wound which rested over a small new growth plaque. A plaque of new growth in the skull and one in the anterior abdominal wall suggests an adrenal tumor. In the right axilla was an ovoid mass six by four cm. of new growth tissue, and on each side of it several firm masses rounding up under the skin.

In the peritoneal cavity there was a few cubic centimeters of bile-stained fluid. The gastro-intestinal tract was negative except that the esophagus was pressed upon by a mass of new growth tissue in the mediastinum. Two or three mesenteric glands towards the cecum were enlarged and infiltrated with new growth. The retroperitoneal glands along the aorta and about the pancreas were enlarged and infiltrated with new growth tissue. The liver was slightly enlarged, the margin two centimeters below the costal border. The diaphragm on the right was at the fourth rib, on the left at the fifth rib.

The right pleural cavity contained a small amount of thin brownish clear fluid. The left cavity was about two-thirds full, 1500 c.c. or more of fluid. There were no pleural adhesions on the right. The left lung about midway in the region of the root was adherent to a mass of new growth.

The trachea and left bronchi contained much mucopurulent material. The right bronchi were negative. So far this process was all on the left side except for the metastases in the glands. A mediastinal new growth which we will speak of in a minute pressed on the trachea in the region of its upper part and at the junction of the trachea and the left bronchus. The bronchial glands on the left were markedly enlarged and infiltrated with new growth tissue, but on the right there were only a few of them and they were smaller. The glands along the trachea and in the region of the cervical glands presented as a fused mass of new growth tissue. They nearly encircled the trachea at the upper end, squeezing it as well as the great vessels leading to and from the heart. There was considerable pressure on the arch and on the descending thoracic portion of the aorta in this region.

On the left side the new growth tissue extended along from the seventh to the tenth thoracic vertebrae and down along the ribs for a short distance, but section of the vertebrae and the ribs failed to show any invasion.

The left lung was moderately collapsed. The mediastinal new growth extended along the root of the lung and irregularly into it for varying distances up to seven or eight centimeters, so that roughly the tumor extended from the mass in the upper mediastinum down along the root of the lung and out into the lung for some distance. This new growth squeezed the bronchi in the region, practically occluding some of them. The bronchi in this region contained much mucopus in places. The lung tissue away from the new growth was spongy to leathery and in places showed a little edema. No definite areas of pneumonia were made out. The right lung was somewhat emphysematous and showed considerable edema. No new growth was found in the right lung.

The pericardium contained about 200 c.c. of thin clear fluid and the epicardium over the left auricle presented a small metastasis one and a half by one cm. The epicardium over the left ventricle also, just beneath this, showed two additional metastatic plaques. The heart weighed 315 grams and showed no particular disturbance in its regional anatomy. The right ventricular wall measured three millimeters, the left ten. The cavities showed considerable dilatation on the right. The valves were negative. There was a slightly defective closure of the foramen ovale. The circulatory apparatus elsewhere was negative.

DR. CABOT: We were surprised not to find the heart pushed over. Is there anything still coming in the description to account for its position?

DR. RICHARDSON: No.

DR. CABOT: Were there any adhesions between the pericardium and the new growth?

DR. RICHARDSON: In the region of the root of the lung, to a certain extent but not such as there would be in a chronic adhesive mediastinitis with chronic adhesive pericarditis. There was possibly some little traction on it, but not enough to state that the heart was definitely pushed or pulled one way or the other except that the heart in its apical ventricular portion was more in the vertical line than usual, and that portion consequently a little further to the right.

DR. CABOT: Was the new growth itself in a position to prevent the heart going over to the right?

DR. RICHARDSON: Yes, it would seem so, in the upper part but not in the ventricular portion mentioned.

The liver weighed 2310 grams, moderately enlarged, smooth surface, the tissue negative except that it was bile-stained. No metastases were found. The bile ducts, hepatic and common, were dilated up to three centimeters. Opening the ducts showed a short distance above the ampulla that the common duct and the duct of Wirsung were involved in a mass of new growth tissue apparently in the head of the pancreas. That squeezed the ducts and produced the icterus. The pancreas was markedly enlarged and showed here and there smaller and larger masses of new growth tissue scattered through the organ. The retroperitoneal glands along the pancreas were considerably enlarged and infiltrated with new growth tissue, and closely applied to the pancreas.

The spleen weighed 197 grams, the surface smooth, the tissue plump and a little soft, otherwise negative.

In the situation of each adrenal there was a large ovoid mass nine by six centimeters. It consisted of new growth tissue with here and there hints of adrenal tissue.

The kidneys weighed 410 grams. The capsules came off, but there were smaller and larger grayish rounded areas, the outer surfaces of metastatic growths in the kidneys. The kidney tissue was otherwise negative.

In general the findings here would make one think of adrenal tumor, and there is new growth in the adrenals, but from the histological character it was felt that more probably it arose from the pancreas and that the case was carcinoma of the pancreas with metastases in the glands, the abdominal wall, the skull, and so on.

CASE 11172

CHILDREN'S MEDICAL DEPARTMENT

A fourteen-months-old boy of American parentage was brought to the Emergency Ward August 22 for relief of convulsions. His parents and their only other child were well. The family history was good. The child was normally delivered at full term and weighed seven pounds at birth. He was breast fed until ten months old, then put upon whole milk, unpasteurized. He was given orange juice when he was a few months old. He gained well and was considered a prize baby, at eleven months weighing twenty-two pounds. He had developed slowly, however, and had only four teeth. Three months before admission he was very ill for two weeks with measles and lost considerable weight. He seemed to recover and did very well until the present illness.

August 12 without known cause he had a generalized convulsion in which he became quite cyanotic. After taking ginger he recovered and seemed well until the morning before admission. Then his mother noticed that his eyes were turned in and that he did not seem to recognize her. He took his bottle as usual. At two o'clock he vomited. He was given an enema with good result. About half past ten at night he had a short generalized convulsion followed within a short time by two others. He was restless and did not sleep all night. At six o'clock the morning of admission he took and retained two ounces of water.

Examination showed a fairly well developed, poorly nourished baby with moist, loose and wrinkled skin. The head was square, with enlarged parietal bosses. The fontanel was open, tense, and bulging, admitting the tips of two fingers. The ears were negative. The eyes showed internal strabismus. The conjunctivae were injected. There was a thin film over both corneae. The eyes were more or less fixed. The nose showed thin nasal discharge. The throat was reddened. The tonsils were red and somewhat enlarged. The cervical glands were enlarged. The chest was poorly formed. The costochondral junctions were enlarged. There was marked depression of the chest wall on both sides with slight flaring of the lower ribs. The lungs were negative. The heart action was very rapid. There was no enlargement to percussion. The abdomen was somewhat scaphoid, otherwise normal. There was some stiffness of the neck, which was drawn to the right. The legs and hands, especially the right, were somewhat spastic. There was coarse tremor of the right hand. The Babinski was only suggestive. The knee-jerks were equal and active. No Kernig, Brudzinski or clonus were elicited.

The temperature was 100.6° to 107.5°, the pulse 105 to 200, the respiration 35 to 100. The urine showed the slightest possible trace of albumin. The hemoglobin was 95 per cent., the leucocytes 30,000, the reds 4,800,000. A Pirquet was positive.

August 24 the temperature was higher. The general condition was fair. The extremities and neck were more stiff. August 23 a therapeutic lumbar puncture gave 25 c.c. of fluid. Another lumbar puncture gave 25 c.c. of clear fluid not under pressure. There was no evidence of block. There were 150 cells, 50 polymorphonuclears, the rest small lymphocytes and occasional large lymphocytes. The albumin was slightly increased. The globulin was strongly positive, the total protein 143, the goldsol 0124321000. A spinal fluid Wassermann was negative. The sugar was 19 mgm. A therapeutic puncture the same day gave 30 c.c. of clear fluid. August 25 a therapeutic ventricular puncture gave 40 c.c. of clear fluid.

August 26 the child was vomiting a good deal. The general condition was about the same. The fontanel was quite bulging in spite of the removal of fluid from the ventricle the night before. He did not take feedings, and was tube fed. The pulse and respiration went up. August 29 there was considerable distension and some constipation. The general condition was much worse. The child was very stuporous. He continued to grow worse, though the abdominal distension became less marked. August 30 he had Cheyne-Stokes respiration all day. The temperature rose to its maximum. That evening he died.

Discussion

BY DR. FRITZ B. TALBOT

This baby before the present illness had gained and developed in a normal manner. One suggestive item in the history was the measles which he had had three months previously. We were taught that measles and whooping cough frequently stir up tuberculosis and have some etiological relation to it.

The history on August 12 of convulsions, strabismus, and vomiting all point to meningitis. The bulging fontanel found in the examination, the eye symptoms, the stiffness of the neck were all confirmatory evidence, and the positive Pirquet further pointed towards tuberculous meningitis. The absence of a Kernig sign did not rule out meningitis. The sudden onset, however, is not usual in tuberculous meningitis, though it does sometimes occur. If the onset alone were taken into consideration one would suspect some other form of meningitis. The spinal fluid was not under pressure and did not seem to give evidence of block. This does not help the diagnosis. The very much increased cell count, however, and the differential count are consistent with either tuberculous meningitis or encephalitis. If the meningitis were the meningococcic or pneumococcic or streptococcic meningitis one would expect to find a very much greater proportion of polynuclear cells in the spinal fluid. One is forced to the conclusion that this child had tuberculous meningitis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Tuberculous meningitis.

DR. FRITZ B. TALBOT'S DIAGNOSIS

Tuberculous meningitis.

ANATOMICAL DIAGNOSIS

Tuberculosis of the bronchial and tracheal glands.
Foci of caseous tuberculosis of the left lung.
Miliary tuberculosis of the lungs, liver, spleen and kidneys.
Tuberculous meningitis.
Otitis media, double.
Slight internal hydrocephalus.
Slightly defective closure of the foramen ovale.

Dr. Richardson: The pia presented a pale yellowish gray layer of exudate, slightly granular in places, which extended from the upper part of the cord, along the medulla, over the pons, out the fissures of Sylvius, and between the frontal lobes. On the convexities about midway there were a few small patches of a similar exudate. The sinuses were negative. In each middle ear there was a collection of pus the cover glasses from which were negative for tubercle bacilli. There were a few diplococcus forms present. The pineal and pituitary glands were negative. The brain weighed 970 grams. The tissue was rather wet and soft, and in a few places the exudate extended for a short distance into the brain tissue. The lateral ventricles were moderately distended and contained a considerable excess of thin pale fairly clear fluid.

The thymus gland was present but quite small. The tracheal and bronchial glands were enlarged up to 3 cm. in diameter and showed marked caseous degeneration.

Right lung. The pleura was sown with tubercles. In the apical region there were many tubercles but no caseous areas or no evidence of old tuberculosis. The tissue generally was pale to dark reddish with no definite increase of consistence and was sown with tubercles.

Left lung. The pleura was sown with tubercles. The apical region showed many tubercles but no caseous areas or evidence of old tuberculosis. The tissue of this lung was sown with tubercles, and in the region of the upper part of the lower lobe posteriorly there was a mass about 3 cm. by 2 cm. which consisted of smaller and larger yellowish homogeneous areas in the midst of smaller and larger tubercles. The central portions of some of the caseous areas showed much caseopurulent-like material.

The liver weighed 405 grams. Scattered over the surface were numerous tubercles. There were a few tubercles on the under surface of the diaphragm above the liver. In the substance of the liver smaller and larger tubercles were seen.

The surface of the spleen was dotted over with tubercles and there were many tubercles in the substance.

The surfaces of the kidneys showed a few tubercles. No definite tubercles were made out in the substance of the organ macroscopically.

CASE 11173

Surgical Department

An English laborer of fifty-eight entered January 2 complaining of diarrhea. His general health had been fair. He remembered no disease. He once had tinnitus for six months. Under treatment at the Eye and Ear Infirmary this disappeared. For four years he had had shortness of breath and orthopnea, moderate until two weeks before admission, since that time extreme. For four years he had had hydrocele. He urinated three times at night.

For two weeks his bowels, previously very regular, had moved nine times during the day and three times at night. The movements were watery, blood streaked, and accompanied by some pain in the region of the rectum. For the past two weeks he had also had griping lower abdominal pain, more on the left, and gurgling and rumbling of the intestines. In the past four years his weight had dropped from 200 to 154. During the past two weeks he had felt weaker.

Examination showed a well nourished man with very pale skin and mucous membranes. There was a questionable mass in the left lower quadrant when he was turned on his right side. There was an umbilical hernia. The examination was otherwise negative.

Before operation the temperature was 99° to 100.7°, the pulse 69 to 100, the respirations normal. The amount of urine is not recorded. The specific gravity was 1.018 to 1.026. The other findings were normal. The hemoglobin was 45 to 30 per cent. There were 6,200 leucocytes, 75 per cent polynuclears, 1,864,000 to 1,696,000 reds showing anisocytosis, polychromatophilia and marked achromia. The platelets were small and diminished in number. The stools showed macroscopic blood and a strongly positive guaiac at two examinations. A third specimen which was negative was thought possibly to be a wrong specimen. A Wassermann was negative. X-ray showed a persistent irregular filling defect in the sigmoid with partial obstruction to the barium at this point.

The patient was strikingly pale, and very dyspneic and orthopneic on the least exertion. The movements were tarry and contained some fresh blood clot. January 7 600 c.c. of blood was transfused and January 9 600 c.c. more. The bleeding in the movements improved slightly after the transfusion.

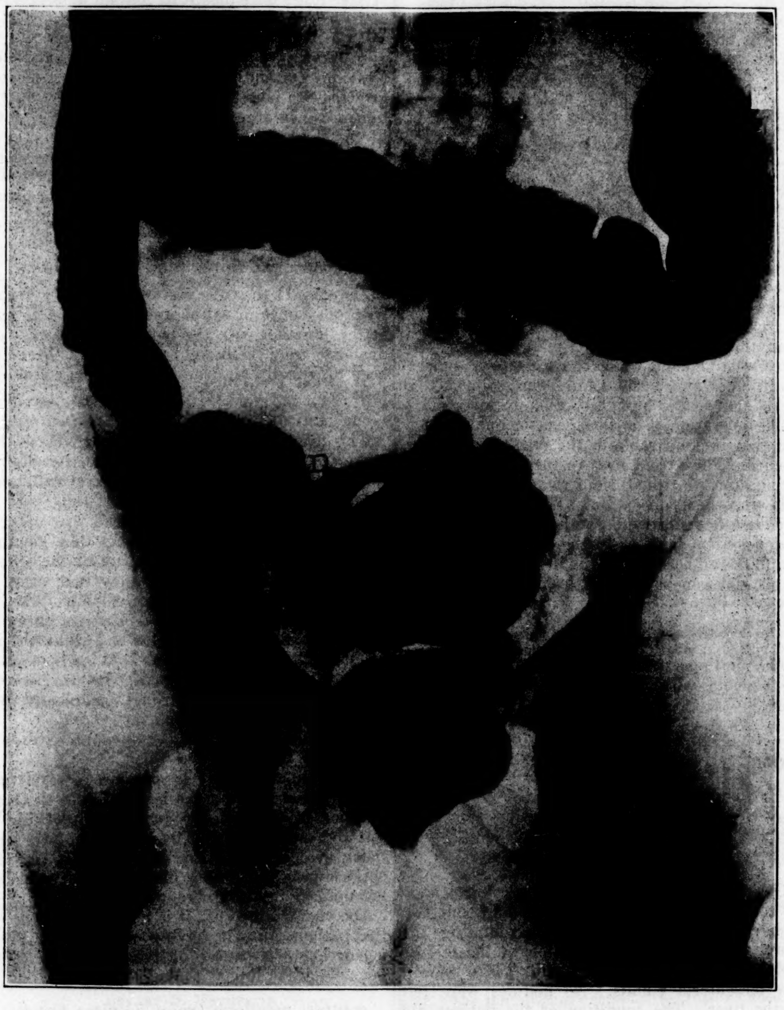
January 10 operation was done. The next day the temperature rose to 101.9°. The pulse was not bad, but the patient looked ill. There was a good deal of bloody drainage in the dressing. The abdomen was somewhat distended and was tender all over, more so in the left flank. Peristalsis was audible by stethoscope. The patient complained of nothing but the Fowler's position. January 13 the temperature rose to 103°, the pulse to 131. There was as much abdominal spasm as the patient's condition could muster. Peristalsis could be heard only with considerable effort. The mental condition was not entirely clear. January 14 the patient died.

Discussion

BY DR. EDWARD L. YOUNG, JR.

So far as the problem of diagnosis is concerned of course on the face of it there is none. There are two or three things worth pointing out. Here is a man who so far as he tells his story has had symptoms for two weeks. Diarrhea alone for two weeks is not of itself a sufficient cause to justify any diagnosis such as we make here. It is questionable whether or not it alone would justify the dictum that any man in the cancer age with a change in his normal bowel habits should have a careful examination with malignancy in mind. On the other hand when we begin to go over the other evidence that can be obtained from this man there is evidence dating back a good deal longer than two weeks. In the first place he has lost more weight than he should have lost. He has a hemoglobin, a red count, that is grossly inconsistent with a simple two-weeks' diarrhea. Those factors justify examination, if they had been discovered before he reported.

In other words, here is a case that does give a very good argument for periodic examination, especially in people over fifty, because certainly with a diminished hemoglobin and diminished red count evidence of trouble would have been discovered long before symptoms drove him to



X-ray shows a persistent irregular filling defect, D, in the sigmoid with partial obstruction to the barium at this point.

the doctor. That is important, as I think will be shown later, not only in making an earlier diagnosis but in getting a man who is much less susceptible to the complications following operation.

The X-ray shows a marked filling defect, and there is another place which looks like a filling defect.

Dr. John D. Camp: The first filling defect, D, represents the lesion. This (Q) might be the lesion or it might be spasm.

Dr. Young: It is pretty deep for a normal peristalsis.

Dr. Camp: But we can get spasm near by when there is complete shutting down by an obstructing lesion. Apparently there was more than one observation, because it says "a persistent filling defect." So that we apparently have a definite diagnosis.

Dr. Young: The question now is the question of treatment. There is no evidence that there is anything wrong with this man besides a cancer of the sigmoid other than his poor general condition, low hemoglobin particularly. Of course that makes him susceptible to infection.

The operation is a considerable one, if they find that it is operable in the sense of a chance to cure. They tried first to increase his blood, giving him two transfusions two days apart, and following them, operation. The operation done of course depended on whether there was gross evidence of metastases in the liver and regional lymph nodes, because that is in the region where an excision can be done with every hope of success.

X-RAY INTERPRETATION

The findings probably represent a lesion in the sigmoid with obstruction, probably malignant.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Malignant disease of the sigmoid.

PRE-OPERATIVE DIAGNOSIS

Cancer of the sigmoid.

OPERATION

Gas-oxygen and ether. Lower left rectus muscle retracting incision. A carcinoma about two inches in length completely surrounding the bowel was found at the junction of the middle and lower thirds of the sigmoid. There were a few mesenteric glands. No nodules were felt in the liver. The condition of the patient did not seem to warrant resection and end-to-end suture. A Mikulicz was therefore attempted. This the surgeon afterwards believed was a poor choice, as it was impossible to get sufficient bowel to bring the two limbs together easily after freeing the growth. The peritoneum was freed on the outer side as high as the splenic flexure, as the bowel could not be brought down sufficiently to unite it easily with the lower portion of the sigmoid. Because of bleeding the growth was removed after closing the peritoneum and two Mixter tubes were placed in the end of the bowel.

PATHOLOGICAL REPORT

A section of large intestine 16½ cm. long. Near one cut end there was a nodular ulcerated growth with slightly raised edges encircling the lumen. No enlarged lymph nodes could be found in the mesentery.

Microscopical examination showed the entire wall replaced by tumor composed of irregular gland tubules and reactionary fibrosis. In places the stroma contained a mucinous-like fluid.

Adenocarcinoma.

ADDITIONAL NOTES FROM THE HISTORY

January 11 the tube was irrigated very gently with one ounce of saline and was found to leak at the junction with the bowel. There was fair drainage from the bowel. January 13 there had been practically no drainage from the colostomy tube.

FURTHER DISCUSSION

This does not necessarily mean metastasis, because the irritation of the growth, the absorption of septic material from the bowel will cause enlargement of the glands.

They felt justified in going ahead.

The hint that we are given that they got into difficulties with the technical part of the operation plus the fact that we know that most of these cases die of sepsis makes us think that the rise of pulse, the spasm and tenderness were due to abdominal sepsis from a leak. I think the interesting thing in this always is to see how much evidence there is of metastasis. In other words, had this operation gone through technically, how much chance of success had it?

Dr. Cabot: Isn't that red count extraordinarily low for a case like this?

Dr. Young: They get very low in carcinoma of the bowel where there is bleeding,—the combination of the toxic products of the cancer itself and the bleeding. There need not have been much evidence from the man himself. Apparently he was not of very high mentality and had not noticed anything wrong with himself.

Dr. Cabot: So that it is not unusual without the patient himself having noticed any gross hemorrhage in cancer of the rectum to get a hemoglobin as low as that.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Carcinoma of the sigmoid.
Peritonitis.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Carcinoma of the sigmoid.
Peritoneal infection from a leak in the suture line.

ANATOMICAL DIAGNOSIS

(Carcinoma of the sigmoid.)
Metastatic carcinoma of the retroperitoneal lymph glands.
Operation wound.
General peritonitis.
Arteriosclerosis.
Slight hypertrophy and dilatation of the heart.
Chronic pleuritis, right.
Cholelithiasis.
Umbilical hernia.
Slightly defective closure of the foramen ovale.

Dr. Richardson: The peritoneal cavity contained much purulent fluid. The intestines were coated with fibrinopurulent material, extraordinarily well marked in the region of the operation wound. In the operation wound the two ends of the sigmoid were sutured. The distal end of the sigmoid and the rectum were empty and negative. The proximal end of the sigmoid and the descending, transverse and ascending colon were dilated and contained much fecal material. The lower end of the proximal portion of the sigmoid showed areas of necrosis and a few small perforations.

The retroperitoneal glands showed metastases. The liver was negative.

The lungs showed a moderate amount of emphysema in the upper part.

The heart weighed 380 grams, slightly enlarged, slightly dilated, and with negative valves. The aorta showed a slight to moderate amount of arteriosclerosis scattered along it and some arteriosclerosis of the great branches.

In the gall-bladder was one stone, but the bladder itself and the ducts were negative. There was a large hydrocele on the left, eight by five cm.

◆

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Endometrial Carcinoma of the Ovary Arising in the Endometrial Tissue of That Organ

Sampson, J. A. (*Archives of Surgery*, January, 1925).

This author presents a very detailed article of 72 pages on this subject. The article is profusely illustrated with beautiful drawings, colored plates, and microscopic sections. He draws the following general conclusions:

"Endometrial tissue in the ovary is of common occurrence. The evidence obtained would indicate that it usually develops from the implantation of bits of uterine mucosa escaping through the tubes during a retrograde menstrual flow from the uterine cavity. Tubal epithelium also may possibly become implanted on the ovary. It is difficult to disprove that endometrium-like tissue may not occasionally arise from the true surface epithelium of the ovary; I have seen a few specimens which might be so interpreted.

"The evidence in favor of malignant changes in endometrial tissue in the ovary as a source of some, and possibly of many, ovarian carcinomas may be summarized as follows:

1. Endometrial tissue in the ovary is of frequent occurrence, having been found present in one or both ovaries in 64 of 332 abdominal operations for pelvic conditions this last year.
2. It is natural to assume that malignant changes should occur in it, as it is governed by the same natural laws as the uterine mucosa, in its reaction to menstruation, pregnancy and the menopause, and the latter becomes malignant. In addition to at least the same potentiality for malignant changes as the uterine mucosa there is the contributing factor of its being ectopic.
3. One of the most striking features of malignant ovarian tumors and their associated peritoneal implants is their close resemblance to benign endometrial lesions of the ovaries, especially to perforated cysts or hematomas and their associated benign endometrial implants.
4. Many adenocarcinomas of the ovary have the same histologic structure as adenocarcinoma of the body of the uterus, namely, endometrial carcinoma.
5. Malignant ovarian tumors are frequently bilateral, as are also benign endometrial growths in the ovary.
6. Bits of cancer from cancer of the body of the uterus may escape through the tubes, causing implants on the peritoneum and the surface of the ovaries; the latter may develop into ovarian carcinomas.
7. The age of incidence of certain types of ovarian cancers corresponds with that of cancer of the body of the uterus.
8. Ovarian papilloma (which frequently become cancerous) has been reported arising from the fimbriae of the tube.
9. This acquired endometrial tissue in the ovary, which is of common occurrence, offers in part the most satisfactory explanation for the frequency of ovarian carcinoma as compared with that of the testis, both organs having a common embryonic origin."

[E. H. R.]

Iodine in Exophthalmic Goitre

Fraser, F. R. (*British Medical Journal*, January 3, 1925), summarizes the effect of iodine administration in 24 cases of exophthalmic goitre as follows:

1. Iodine can bring about a lowering of basal metabolic rate, and of heart rate, and an increase of body weight, with a striking improvement in the general condition of the patient.
2. The improvement obtained with iodine does not as a rule persist.
3. The optimum dose at the commencement appears to be about minims xv of a 10 per cent. solution in alcohol, but this dosage cannot as a rule be maintained more than a few days or weeks. If the administration is stopped the condition immediately relapses. For prolonged treatment the dose should be lowered as soon as the initial improvement has taken place, and the administration continued with

doses of minims iii-vi daily. The dosage must be carefully regulated according to the condition of the patient.

4. Increasing hardness of the thyroid gland is an indication for a smaller dosage.

5. The condition of the patient may be made worse, instead of better, if too large a dosage is employed.

[R. C.]

Annals of Surgery, January, 1925

This volume is a commemorative number in honor of the completion of forty consecutive years of editorial labor in the development and conduct of this monthly review of surgical science and practice by Lewis Stephen Pilcher.

This number contains the following interesting and valuable articles:

"The Early Days of the *Annals of Surgery*," by William W. Keene.

"Masters of Surgery in the Early Years of the *Annals of Surgery*," by William J. Mayo.

"Lupus in Its Surgical Aspects," by W. S. Handley, London.

"Spinal Anesthesia," by René Leriche, Strasbourg.

"Pylorus Spasm and Its Surgical Treatment," by Raffaele Bastianelli, Rome.

"Antethoracic Esophagoplasty," by Rovsing, Copenhagen.

"So-Called Idiopathic Dilatation of the Esophagus," by P. N. Bull, Oslo.

"Clinical Notes on Tuberculosis of the Kidney," by Mauritz Persson, Stockholm.

"Aneurism of the Renal Artery," by H. Schramm, Lwow, Poland.

"Latent Jaundice as a Symptom of Biliary Colic," by G. deTakats, Budapest.

"Some Fracture Calamities and Their Management," by Sir John O'Conor, Buenos Aires.

"On the Resection of the Stomach by Kocher's Method," by T. Aoyama, Tokio.

"Acute Pancreatitis," by Sir Berkeley Moynihan, Leeds, England.

"The Treatment of Chronic Recurrent Dislocation of the Shoulder by Crucial Capsular Plication," by W. L. Kellar, Washington.

"Surgery of Juxta-Pyloric Ulcer," by G. F. Cottle, Brooklyn.

"Amputations in Industrial Surgery," by W. L. Estes, Bethlehem, Pa.

"Thoracic Surgery as a Specialty," by H. Lilienthal, New York.

"Gas Gangrene," by J. T. Pilcher, Brooklyn.

"Craniotomy under Local Anesthesia," by C. A. Elsberg, New York.

"The Diagnosis and Localization of Spinal Cord Tumors," by W. E. Dandy, Baltimore.

"Spasmodic Torticollis," by J. M. T. Finney and W. Hughson, Baltimore.

"Practical Points in Connection with Goitre Surgery," by A. J. Ochsner, Chicago.

"The Experimental Transplantation of the Diaphragm as an Adjunct in the Treatment of Lesions at the Lower End of the Esophagus," by G. J. Heuer, DeW. Andrus and H. G. Bell, Cincinnati.

"The Surgery of Jaundice," by John B. Deaver, Philadelphia.

"Jaundice," by S. P. Reimann, Philadelphia.

"Internal Biliary Fistula," by E. S. Judd and V. G. Burden, Rochester, Minn.

"Hour-Glass Stomach and Duodenum," by C. H. Mayo, Rochester, Minn.

"Diverticulitis of the Colon," by C. H. Peck, New York.

"Post-Operative Complications of Abdominal Operations," by G. W. Crile, Cleveland, Ohio.

"The Rational Treatment of Sliding Hernia," by A. V. Moschcowitz, New York.

"Some Unusual New Growths in the Region of the Inguinal and the Femoral Glands," by J. S. Horsley, Richmond, Va.

"Pelvic Actinomycosis," by Walter M. Brickner, New York.

"Theory and Treatment of Spiral Fractures," by E. Rixford, San Francisco.

"The Abduction Treatment of Fracture of the Neck of the Femur," by R. Whitman, New York.

"The Story of the *Annals*," by L. S. Pilcher, Brooklyn.

"Two Scores of Years of Editorial Work," by F. H. Martin, Chicago, and W. M. Brickner, New York.

[E. H. R.]

Basic Principles and Supreme Difficulties in Gastric Surgery

Devine, H. B., Melbourne, Australia (*Surgery, Gynecology and Obstetrics*, January, 1925).

This author presents a very interesting, well written article on this subject, which shows a very extensive knowledge of gastric surgery and is illustrated by a very unusual line of cases. The author draws the following conclusions:

1. The conception put forth in this paper that the sympathetic imposes a retention postural tone on the gastric muscle affords an explanation of many clinical phenomena.

2. Alterations in gastric posture which are governed by the labile sympathetic, derange the natural alkaline duodenal protective regurgitation which controls acidity, and probably initiate a set of circumstances which may eventually result in ulcer.

3. In some ulcers hyperacidity is the controlling cause, while in others some local loss of resistance, such as infection, etc., is necessary for ulcer with a low acidity; in the former an alkalizing operation is essential.

4. Gastro-enterostomy is most uncertain in its regurgitant alkalizing effect.

5. Unless an old ulcer is resected in association with gastro-enterostomy recurrence even with a low acid from the residual infection of the ulcer is probable.

6. The good effects of gastrectomy in duodenal ulcer are due to the exclusion of the ulcer and to a better alkaline regurgitation rather than to any hyposecretion.

7. The same effect can be obtained in these old ulcers, if unassociated with obstruction, by the partial gastric exclusion operation, which is as simple, safe and conservative as a gastro-enterostomy, with the good effects of a gastrectomy. This is attained by eliminating the sympathetic retentive area of the stomach.

8. The gastric ulcer type of stomach lends itself with success to extensive resection of ulcer with gastro-enterostomy or to partial gastrectomy.

[E. H. R.]

Muscular Exercise in Diabetes Mellitus

Hetzel, K. S. (*British Medical Journal*, January 17, 1925), is of the opinion that muscular exercise in patients suffering from diabetes mellitus depletes the blood glucose provided there is an adequate supply of insulin in the tissues. The more perfect and complete tissue metabolism is demonstrated by the disappearance of ketones from the urine under these conditions. As the result of exercise the blood sugar tends to fall rapidly to between 0.07 and 0.10 per cent., but it does not become lowered further. No hypoglycaemic reactions have occurred on exercise even if the initial blood sugar was as low as 0.07 per cent. Muscular exercise does not tend to cause acidosis provided there are adequate carbohydrate and insulin for its transformation.

[R. C.]

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THE MECHANISM OF ANGINA PECTORIS

IN spite of the careful study during the past one hundred and fifty years of victims of angina pectoris both during life and after death we are but little nearer the solution of the question of its mechanism than were our forefathers a century ago. In fact it is impossible to find today a better description of some of the characteristics of the condition than was made by Heberden in 1782: "The angina pectoris, as far as I have been able to investigate, belongs to the class of spasmodic, not of inflammatory, complaints. For

"In the first place, the access and the recess of the fit is sudden.

"Secondly, there are long intervals of perfect health.

"Thirdly, wine, and spirituous liquors, and opium afford considerable relief.

"Fourthly, it is increased by disturbance of the mind.

"Fifthly, it continues many years without any other injury to the health."

These few sentences of Heberden's indicate his belief that angina pectoris is rather a so-called functional disturbance than a symptom of any obvious structural defect and his observations have been supported during the 150 years that have elapsed by the variable pathological and often essentially normal condition of the heart and arteries found at post-mortem examination in cases who have had typical angina pectoris. There may or may not be myocardial damage, coronary sclerosis or aortic disease. Sometimes all these conditions are present and sometimes none of them. Usually there is some degree of sclerosis present in the aorta or coronary arteries, but angina pectoris is found most frequently in late middle life and early old age when arterial degeneration commonly appears any way, and in these cases the arteriosclerosis may have little or nothing to do with the condition. Often extensive aortic disease—syphilitic or arteriosclerotic—occurs with no angina pectoris at all. In fact it is more often the rule in such cases not to have it than to have it. The same applies to myocardial disease and to coronary sclerosis. Therefore on the basis of pathological findings at post-mortem examination we cannot satisfactorily explain the mechanism of angina pectoris, and this very discrepancy undoubtedly accounts for the failure in one hundred and fifty years to learn how this paroxysmal heart pain is produced. Of course more careful examination of coronary arteries (or aorta) in all cases may eventually reveal very early evidence of arterial wall change which may be responsible in part for the irritability producing the pain, but as yet this has not been found. However it is a fact that in very old people with marked arteriosclerosis true angina pectoris is less common than in younger people with more normal arteries.

More important in the study of the mechanism of angina pectoris than the pathological findings have been clinical studies of the type of individual usually affected, the paroxysmal nature of the pain, and its relief by vasodilatation. The high strung overworked business or professional man in late middle life is the typical victim. A sensitive overworked nervous system in later life seems to be a much more common finding than arteriosclerosis. The heart is usually normal on physical examination and the blood pressure also as a rule normal, although hypertension may be present incidentally with cardiac hypertrophy.

We must probably look to further careful observations in the clinic for help in solving the question, rather than to post-mortem data, although extensive detailed examination of the coronary arteries and aorta in the cases with no obvious pathology may help. A promising source of light is likely to come from the more careful study of the nerve supply of the heart, of its physiology, and of its abnormal activity, stimulated by the operation of cervical sympathectomy now being carried on in various parts of the world for the relief or cure of angina pectoris. Having acknowledged our need for help in solving the riddle of this paroxysmal heart pain we must search with renewed interest for the answer.

ARROWSMITH

"Wad some power the giftie gie us
To see oursels as ithers see us."

To some of us in the medical profession, this gift has been granted by the Goddess of fiction. Through the sharp-pointed pen of Sinclair Lewis, she has depicted for us the career of a scientist, of one in whom burns that tiny white flame of scientific curiosity which nothing can extinguish. Great realism is lent to the story by the assistance of Dr. Paul De Kruif, who, it is fair to assume from the author's dedication, supplied the atmosphere and the technical allusions.

To a medical man the book is interesting from a double point of view. The career of Arrowsmith, a character without much to recommend him save his scientific honesty, must be followed with the greatest sympathy by all who have ever felt the magic of the quest for hidden truths. The obstacles he meets, the various phases of medicine in which he struggles to express his desire to know, the personalities who cheer him on or who strive to strangle or exploit his genius, are even more true to life than the situations and characters in Main Street and in Babbitt. With beautiful art Lewis carries this unlicked cub through a real Pilgrim's Progress; the values are true, and delight the soul. One feels that many of the characters—Gottlieb, Sondelius—are drawings from life, from the nude as it were.

In Arrowsmith the scientific side of medicine is portrayed, while in Main Street the life of the practitioner is exemplified in Will Kinnicutt. The two books, taken together, form a remarkably accurate picture of certain phases of medicine as they exist today. Whether the author is attempting to point a moral is difficult to say. True art is not a sermon, and Arrowsmith is true art.

NOTICE TO CONTRIBUTORS

The attention of contributors is called to the desirability of having charts which are submitted for publication clearly and carefully printed. The ruling of the spaces must be done with *black* ink. If erasures are made, they should be done carefully, so that the printing when finished is of an even intensity. Care spent in the preparation of these charts makes them creditable both to the author and to the Journal.

A number of articles submitted for publication are characterized by careless construction, poor spelling and incorrect punctuation. These inaccuracies tend to prejudice the Staff against a paper, and to raise doubts concerning the scientific reliability of the writer. If the paper is accepted, it becomes necessary for some one to correct the most obvious errors, and in doing this the author's meaning may be somewhat altered. Read your contributions carefully before submitting them.

MISCELLANY

THE JOURNAL OF METABOLIC RESEARCH

The Journal of Metabolic Research of Nov.-Dec., 1923, is closed with the following announcement:

"A plan existed whereby a large European work would have occupied this entire Journal for 1924, and thus at one stroke publication would have been brought up to date for 1925. Long delays have disappointed this expectation, and the Journal therefore finds itself one year behind time. On the other hand the number of manuscripts received is increasing so that publication can now be hastened. The Journal will probably appear in quarterly form until this material is disposed of and publication brought up to date. After that, the intervals of publication will be governed by the material received, but it appears probable that the monthly basis can be resumed."

NOTES FROM THE MEETING OF THE AMERICAN CHEMICAL SOCIETY IN BALTIMORE

The death rate from accidental causes among industrial workers is about two and one-half times that for the non-industrial group, the committee on occupational diseases and hazards in the chemical trades of the American Chemical Society reported to the society. Pneumonia is twice as high among industrial as among non-industrial workers, the report added, continuing:

"Tuberculosis is more important than accidents for a loss of between eighteen months and two years in the longevity of workers and industrial employment is probably the most important single factor in the tuberculosis death rate. In a similar manner conditions such as cerebral hemorrhage, Bright's disease and organic heart diseases show strikingly the effects of industrial exposure. The death rates are two and three times as high as in the non-industrial groups during the active working years of life.

"As regards the hazards inherent to exposure to certain industrial poisons, it is believed the number of immediate deaths is probably not large, but the indirect effects can be noted in the curtailed efficiency of workers in these trades, in long periods of illness and disability."

Care of trivial injuries is receiving greater attention from the industries, the report said.

Over 2000 cases of infection were noted in a group of 32,500 workers during a single year, and of this number only twenty had received treatment prior to the appearance of the infections. These facts were ascertained by a group of physicians in industrial concerns employing between 600,000 and 700,000 persons. Investigation among insurance policyholders disclosed that the average loss of working time was eight days per annum for gainfully employed men. Inasmuch as illness goes unrecorded, the actual loss, it is believed, is much heavier.

The committee urged a nationwide survey of the dangers which lead to occupational diseases in the chemical industries. Waste of humans would be eliminated by exact knowledge in this field, and safety measures could be applied to very many plants which are not listed as chemical industries, but which carry on very hazardous chemical operations.—*Boston Transcript.*

LAST CALL FOR REGISTRATION ON THE INTER-STATE POST GRADUATE ASSEMBLY CLINIC TOUR OF AMERICAN PHYSICIANS TO CANADA, BRITISH ISLES AND FRANCE

THE medical profession of America who are in good standing in their State Medical Societies and members of their families are cordially invited to participate in the Inter-State Post Graduate Assembly clinic tour to Canada, British Isles and France leaving Chicago May 17 and sailing from Montreal May 23. There is no restriction to territory. Dr. Charles H. Mayo of Rochester, Minnesota, will be the presiding officer of the tour, and Dr. William B Peck of Freeport, Illinois, Managing-Director.

The following distinguished members of the profession and citizens of the foreign countries are in charge of the arrangements in the clinic cities: *Toronto*: Dr. Alexander Primrose, Dean of the University of Toronto. Clinics will be conducted in the different branches of medical science at the Toronto General Hospital, the Medical Building of the University of Toronto and other Institutions of the city. *Montreal*: Dr. Charles F. Martin, Dean, and Dr. Jonathan C. Meakins, Director of the Department of Medicine of McGill University. *London, England*: Mr. Philip Franklin, F. R. C. S., Director of the American Hospital and Honorary Organizer; Sir Humphrey Rolleston, Bt., President, Royal College of Physicians; Sir St. Clair Thomas, President of the Royal Society of Medicine; Sir William Hale White, Retiring President Royal Society of Medicine; Sir William Arbuthnot Lane; Sir Holburt J. Waring, Chairman of the Medical Program committee; Mr. W. Girling Ball, F. R. C. S.; Mr. H. W. Carson, F. R. C. S., and the honorary secretaries of the different specialties.

Special social features of the London program will include the conferring of the Honorary Membership of the Association upon H. R. H. Duke of York, the Rt. Hon. Austen Chamberlain, Minister of Foreign Affairs; Rt. Hon. Neville Chamberlain, Minister of Health; Sir Alfred Bower, Lord Mayor of London; Lord Desborough, Chairman of the Pilgrims' Society; Sir Humphrey Rolleston, Bt., President, Royal College of Physicians; Sir John Bland Sutton, President Royal College of Surgeons; Sir St. Clair Thomson, President Royal Society of Medicine; Sir Holburt J. Waring, Chairman of Medical Program committee; Sir John Y. W. MacAlister, Secretary, Royal Society of Medicine.

Receptions and luncheons will be given by the Lord Mayor of London, the Presidents of the Royal Societies of Medicine and Surgery, the English-Speaking Union, the Pilgrims' Society, American Chamber of Commerce and members of the British Government.

Liverpool: Sir Robert Jones, Mr. R. E. Kelly, F. R. C. S., and members of the staffs of the following hospitals: Royal Infirmary, Royal Southern Hospital, Northern Hospital, Liverpool Stanley Hospital, Royal Liverpool Children's Infirmary, Hospital for Women, Liverpool Maternity Hospital.

Manchester: Sir William Milligan and members of the staff of the Royal Infirmary.

Leeds: Sir Berkeley Moynihan and members of the staff of the University of Leeds.

Dublin: Sir William DeCourcy Wheeler, Past President of the Royal College of Surgeons of Ireland, Honorary Organizer; Sir William Taylor, Sir Arthur Ball, Sir Robert Woods and their colleagues. The clinic work will be distributed among nine hospitals. The Governor-General of the Irish Free State has invited the Assembly to a Garden Party at the Government House. A reception committee has been formed consisting of the Provost of Trinity College; President of University College; President, Royal College of Physicians; President, Royal College of Surgeons; President, Royal Academy of Medicine and President of Association of Surgeons. These gentlemen, separately or collectively, will entertain the Assembly on the night of its arrival. The Hon. Lady DeCourcy Wheeler is organizing a Ladies' Committee to take care of the visiting doctors' wives while the doctors are at work.

Belfast: Prof. Andrew Fullerton, C. B. C. M. G., Head of the Department of Surgery, Queens' University, Chairman; Sir Thomas Sinclair, Emeritus Prof. of Surgery and a member of the House of Parliament; Prof. W. W. D. Thomson, Head of the Department of Medicine; Prof. R. J. Johnstone, Head of the Department of Gynecology; Prof. C. G. Lowry, Head of the Department of Obstetrics; Prof. J. E. MacIlwaine, Head of the Department of Therapeutics and Pharmacology; Dr. A. J. Craig and Dr. H. Hanna, Department of Ophthalmology and Otology; Prof. Symmers, Head of the Department of Pathology, and Dr. Thomas Houston (Haematologist). In presenting the clinics and demonstrations the teaching staff of Queen's Universiy will be associated with that of the Royal Victoria Hospital.

The social features will include a Garden Party given by Sir James and Lady Craig, Prime Minister of Northern Ireland, at Stormont Castle.

Glasgow: Sir Donald MacAlister, K. C. B., Principal of the University of Glasgow, Chairman; Dr. James Carslaw, Secretary and members of the staff of the Medical Department of the University of Glasgow.

Edinburgh: Sir Harold J. Stiles, Head of the Department of Surgery, University of Edinburgh, Chairman; Dr. John D. Comrie, Secretary; Sir Norman Walker, Sir David Wallace, Sir E. A. Schafer and associates at the University of Edinburgh and the Royal Infirmary.

Newcastle-upon-Tyne: Mr. George Grey Turner, F. R. C. S., and associates on the staff of the Royal Infirmary of Newcastle and the University of Durham.

Paris: Prof. Theodore Tuffier of the Surgical Department Faculty of Medicine, Paris, Chairman: Dr. T. deMartel, Secretary. Practically all the hospitals of Paris are contributing programs for the benefit of the American physicians.

Among the numerous social functions of Paris are the following: A reception given on June 22 by the Academy of Medicine; a large reception given in honor of the American physicians by the Municipal Council of Paris at the Hotel de Ville (City Hall); an evening reception and banquet by the Inter-Allied Assembly and a reception by Professor Tuffier at his country home, which is located near Versailles. Honorary memberships will be conferred upon distinguished statesmen, soldiers and citizens of France.

The tour is being conducted as the result of an invitation extended to the American physicians through this Association by the leading universities and medical institutions of Canada, British Isles and France.

Clinic space in all the clinic cities has been arranged so as to accommodate five hundred physicians. The clinics will cover every branch and specialty of medical science. The price of the tour, including traveling expenses, under $1000.00.

Two ships have been chartered to take the physicians abroad, the "Ausonia" of the Cunard Line and the "Doric" of the White Star Line. They are fine new one-cabin ships with excellent appointments. Trans-Atlantic professional programs will take place on board both ships Eastbound and will be participated in by the physicians of the tour.

Reservation can be made by sending the reservation fee of $65.00 per person to Dr. William B. Peck, Managing-Director, Freeport, Illinois. There are plenty of first-class accommodations available.

The registration March 17 was 375 physicians and total number, including members of the physicians' families, 625. Forty-one states are represented, and quite a number of provinces of Canada.

OPPORTUNITIES FOR GRADUATE MEDICAL STUDY IN NEW YORK

The Committee on Medical Education of The New York Academy of Medicine has prepared a series of synopses of approved opportunities for graduate medical study in New York City which will soon be published for distribution. The synopses cover dermatology and syphilology, obstetrics and gynecology, internal medicine, neurology and psychiatry, ophthalmology, oto-laryngology, pediatrics, surgery, urology, and orthopedic surgery.

A Bureau of Clinical Information is maintained at the Academy of Medicine, 17 West 43rd Street, where detailed information is available regarding opportunities for graduate medical study in New York, and also in other cities of the United States and abroad. The Executive Secretary in charge of the Bureau is prepared to answer inquiries concerning ordinary internships, special internships or residencies, graduate courses in medical schools and teaching hospitals, and extension courses. Much information in regard to graduate medical work in England and on the Continent is on file.

The Bureau publishes a Daily Bulletin of Surgical Clinics which will be mailed free to visiting doctors on request. A Weekly Bulletin of Medical Clinics also is published. A book of the fixed clinics of Greater New York, with a transportation guide, has been prepared for the use of visitors whose stay in the city is limited, and is furnished without charge.

COURSE IN PUBLIC HEALTH AT UNIVERSITY OF MICHIGAN

In line with the universal demand that public health officials shall bring to their respective fields fundamental training in public health comes the announcement from the University of Michigan, Ann Harbor, Michigan, that summer courses in public health will be offered from June 22 to July 31. These courses in public health will cover the essential principles of public health and will be conducted by members of the University staff as well as others of national reputation.

JUST TO REMIND YOU

The New England Health Institute meets in Portland, Maine, May 4-9.

This is the third Health Institute to be held in the New England states. It was started in Connecticut in 1922, conducted by Massachusetts in 1924, and Maine is to be in charge in 1925.

This is a splendid opportunity for health workers to get together, and study the latest methods in health work. The Institute will cover such subjects as Health Administration, Preventable Diseases, Sanitation and Engineering, Tuberculosis, Venereal Diseases, Child Hygiene, Public Health Nursing, Social Work, Mental Hygiene, Nutrition and Health Education.

Let us make the Connecticut delegation a large one.

MASS. DEPT. OF PUBLIC HEALTH

For the week ending March 7, the most prevalent infectious diseases in Massachusetts were:

Measles	599 cases
Scarlet fever	319 cases
Chicken pox	238 cases
German measles	228 cases
Pneumonia (lobar)	215 cases
Whooping cough	198 cases
Tuberculosis (all forms)	142 cases
Diphtheria	120 cases

THE LIST OF APPROVED HOSPITALS HAS BEEN REVISED

The 1925 revised list of hospitals approved for internships by the Council on Medical Education and Hospitals of the A. M. A. appears in the Hospital Number of the Journal for March 28. The list was first published by the Council in 1914, in response to a growing demand for such a list for the guidance of medical graduates and others seeking a year or more of hospital experience. It has since been revised every two years until 1922 and annually since that time.

The approved list at present contains only general hospitals that are in position to furnish full-rounded internships such as satisfy the medical colleges and state boards as well as meet the almost universal demand of medical graduates for at least a year's hospital experience before either general practice or specialization. The Council also issues a list of hospitals that provide residencies in the specialties for graduates who have already served a general internship.

FAITH HEALING

At the Durham Diocesan Conference Dr. Hensley Henson, the Bishop of Durham, referred to Mr. Hickson's book *Healing the Sick*. In his opinion, though the volume was full of testimonies to Mr. Hickson's cures, they fell far short of what might be fairly required, and in the absence of scientific diagnosis before the Bradford mission and examination afterwards they could not be decisive. The psychotherapeutist could effect all that the spiritual healer effected and there was nothing in the methods of the latter which involved any procedure unknown to the former. Spiritual healing meant no more, and no less, than mental healing. Faith healing was common to all religions. Mr. Hickson spoke of Christian healing, but there was really nothing distinctively Christian about it. Faith healing appeared to have no relation to morality.

With Mr. Hickson's exercise of the faith-healer's gift, which he appeared to possess, the Bishop was not concerned. If Mr. Hickson was wise he would exercise it with caution, remembering that he might easily do grave, even irreparable, injury to those who sought his aid. That was his concern. When, however, he called upon the Church to revive this, the physical healing part of her ministry which he alleged had been lying in abeyance so long, the Bishops owed it to the Church to declare their deliberate judgment.

The Christian ministry was not charged, and could not wisely concern itself with the healing of disease. That was the incommunicable task of the physician. Did it follow that there was no sphere for the coöperation of the doctor and the clergyman in the ministry of healing? None knew better than the doctors that there were limits which their skill could not overpass. The troubled conscience might have its influence, indirect, even unsuspected, but none the less potent upon the patient's power to benefit from their efforts. And the sphere of conscience was preëminently that within which the clergyman's duty was unquestionable. The modern physician could discern the nature of the psychic trouble which arrested and defeated physical treatment, and his knowledge might lead him to desire the clergyman's distinctive service.

In his enthusiasm for spiritual healing, Mr. Hickson was led to imply that the cessation of a healing ministry in the Church had been calamitous to mankind. He denounced the Church even fiercely for leaving unused a healing gift which might purge the world of its pain. But he was mistaken. No contrast between the present and the past was more extreme than when the medical resources of our time were compared with those existing in any former age. When miracles of healing were most numerous, public health was least satisfactory. The wonderful advance of medical and surgical science had been conditioned throughout by its hardly-won independence of theological presuppositions and ecclesiastical control. It could not be the duty of the Church deliberately to return to the beliefs and methods of a primitive and superstitious past (*Times*, March 16, 1925).

The above is an outspoken and reasoned exposition of the limits which should be placed to the activities of persons who, in their enthusiasm for methods which are sought to be exercised under the ægis of the Church, lose all sense of proportion in their claims to the possession of the gift of healing. We welcome the publication of the Bishop's views.—*Medical Press & Circular*, March 25, 1925.

VETERANS' BUREAU HOSPITALS NEED OCCUPATIONAL THERAPY AIDES

Washington, D. C., March —, 1925.—There are about 20 vacancies in positions of occupational therapy aide in hospitals of the United States Veterans' Bureau, it is stated by the United States Civil Service Commission.

The Civil Service Commission will receive applications for these positions until April 30.

The duties of occupational therapy aides consist of giving instruction in the arts and crafts or in academic or commercial subjects.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board at the post office or customhouse in any city.

Boston Medical Library

Recent Accessions

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Wintz, H. Die Röntgenbehandlung des Uteruskarzinoms. Lpz., Thieme, 1924.

Wintz, H. Die Röntgenbehandlung des Mammakarzinoms. Lpz., Thieme, 1924.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Junior Medical Officer
Assistant Medical Officer
Associate Medical Officer
Medical Officer
Senior Medical Officer

Applications for the positions listed above will be rated as received until June 30. The examinations are to fill vacancies in various branches of the Government service, at entrance salaries ranging from $1860 to $5200 a year.

Applicants for these positions must have been graduated from a medical school of recognized standing, and, in addition, have had certain specified experience or postgraduate study. It is provided, however, that applicants for the position of junior medical officer who are senior students in a medical college may be admitted to the examination subject to their submitting proof of actual graduation within six months from the date of making oath to the application.

The need is for eligibles who are qualified in the various specialties of medicine and surgery; there is no great need at this time for those who are qualified in general medicine or surgery.

Competitors will not be required to report for examination at any place, but will be rated on their education, training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

LEGISLATIVE NOTES

Doctor Bigelow and members of the Joint Committee on State and National Legislation appeared in opposition to Bill 379 at a hearing which was held Wednesday, April 15, before the Senate Committee on Ways and Means. Many other organizations were reported as being opposed to the passage of this bill and we hope that the bill will be defeated.

The Committee on State and National Legislation has voted to oppose Bill 378 on the ground that it favors class legislation, in that it requires the appointment of an osteopath on the Board of Registration in Medicine. We had hoped that the Governor of Massachusetts would be given authority to appoint seven physicians duly qualified to serve on this important Board and, if he saw fit to appoint an osteopath who is a graduate of a legally chartered medical school in this State, there would be no criticism.

To compel the Governor to appoint a man of any particular cult on this Board suggests class legislation and this bill should be defeated unless that portion of the bill is corrected.

CORRESPONDENCE

LONDON LETTER

(From Our Own Correspondent)

London, March 9, 1925.

FALLING BIRTH RATE

A still lower birth rate, a slightly higher death rate, and a consequent decline in the natural increase of population are disclosed in last year's provisional figures for England and Wales, just issued by the Registrar-General. The quarterly returns show that 730,286 births and 473,270 deaths were registered during the twelve months. Hence the natural increase by excess of births over deaths was 257,016, or as much as 78,336 below the average annual increase for the preceding five years, namely, 335,252. The main facts which emerge may be stated briefly as follows: Save for the war years 1917-19 the birth rate at 18.8 per thousand was the lowest recorded. At 12.2 per thousand, the death rate was 0.6 higher than in 1925. Infant mortality was 75 per thousand births, or 6 per thousand above the previous year's figures.

The marriage rate, at 15.8 per thousand, was slightly higher than in 1923, but considerably lower than in any other year since 1918. Of the 170,995 births in the December quarter, 87,366 were males and 83,269 females, giving a proportion of 1045 to 1000, against an average in the fourth quarters of the ten preceding years of 1051. Deaths registered numbered 108,660 and were 18,505 more than in the September quarter, but 6120 fewer than in the corresponding period of 1923. They included 55,332 males and 53,328 females, corresponding to an annual rate of 11.1 per 1000 of the estimated population and a proportion of 1038 males to 1000 females.

The general death rate was the lowest recorded in any fourth quarter since the establishment of civil registration. Influenza was stated to be either a primary or contributory cause of deaths in 1549 cases, or 1.4 per cent. of the total. Measured by the proportion of deaths of infants under one year of age to births registered, the infant mortality was equal to 75 per 1000, this being 5 per 1000 above the rate for the fourth quarter of 1923, but 15 per 1000 below the average of the same period in the ten preceding years. The natural increase of population in England and Wales by excess of births over deaths for the months October-December was 62,333, as against 77,337, 66,285 and 63,643 in the corresponding periods of 1921, 1922 and 1923. Complete statistics of marriage in the last three months of 1924 are not yet available, but in the September quarter the number of persons married was 179,576, an increase of 17,230 over the number in the preceding quarter, and 4998 more than in the corresponding period of 1923. The total corresponds to an annual rate of 18.4 per 1000 of the estimated mid-year population.

DEDICATION OF WAR MEMORIAL AT EPSOM COLLEGE

Epsom College is in its way unique. It was founded some 70 years agc by Dr. John Propert for the education of 50 boys, the children of deceased or disabled medical men, and to give pensions to 50 aged or disabled medical men or their widows.

At the present time Epsom College is a public school of the first class, the term here meaning a school for the professional and well-to-do classes, which provides, in accordance with the intentions of its founder, not only a free education, together with clothing, maintenance and pocket money, to 50 sons of deceased or disabled medical men, but affords to the sons of medical men generally a school education at as near cost price as possible. It may be added that generous benefactions have increased the value of many pensions, so that last year the college bestowed no fewer than 166. In the war 1000 old Epsom College boys served in the army, of which number 140 gave their lives. In memory of these, Epsom College Chapel has been reconstructed at the cost of £11,500, £1000 of which was given by Lord Rosebery, president of the college.

On February 21 this memorial building was opened and consecrated by the Bishop of Winchester amid impressive ceremonial and in the presence of a large congregation.

NEW DEPARTMENTS AT THE LONDON HOSPITAL

At a quarterly court of the governors of the London Hospital, Whitechapel Road, London, East, held recently, Viscount Knutsford, the chairman, mentioned that the matron of the hospital had returned from a visit, arranged by the Rockefeller Foundation, to the hospitals in America, where she had studied methods which might be adopted or adapted for use at the London Hospital. The Foundation had offered a scholarship to one of the hospital's sisters to go to America at their expense and study dietetic treatment, upon which many diseases, such as diabetes, epilepsy and gastric ulcer, depended for treatment. The committee had felt that it was important to establish a dietetic department at the hospital, and it was proposed that on her return the sister should be placed in charge of it. The Rockefeller Institute had also offered a research scholarship to one of the hospital's sisters to study the methods carried out for the treatment of children at Vienna, and on her return she would be placed in charge of the infant welfare department which it was proposed to establish.

Dealing with the various proposed improvements and extensions of the hospital buildings, he said that, owing to the overcrowding which now took place, it had been decided to build a hostel for 36 resident doctors at the cost of £40,000. It was also proposed to spend £10,000 in connection with the enlargement of the pathological department under Professor Turnbull, the work of this department having long since outgrown the accommodation. It had been desired to build a new department so that the work which the late Sir James Mackenzie had established could be continued. It was estimated that it would cost £7000, but the House Committee had so many commitments that they felt they dare not embark on the scheme. It would be very satisfactory in view of the thousands of people who had benefited by Sir James Mackenzie's work, if someone would come forward and render possible the carrying out of the plan. The chairman informed the meeting that Lord Bearsted had promised to give £10,000 for the provision of a new clinical theater. During the past two weeks Mr. Alfred Williams had promised a sum of £10,000 in memory of his son, Owen. The income of this money was also to be spent in the investigation of disease.

CONTROL OF TUBERCULOSIS AND THE MILK SUPPLY

At a meeting of the combined Sections of Epidemiology, Comparative Medicine and the Diseases of Children of the Royal Society of Medicine, held in London on March 2, last, Dr. John McVail, president of the Section of Epidemiology, being in the chair, the control of tuberculosis and the milk supply were discussed.

Dr. M. J. Rowlands spoke of his practical experience in pig farming, and ascribed the liability of cattle to tuberculous infection to the two factors of bad feeding and overwork. He pointed out that nowadays there was practically no vitamin-content in the diet of dairy cows; the whole of the germ was taken out, and an animal that was intended by nature to produce sufficient milk for one calf at a time when natural vitamin-rich foods were prevalent was made to yield from one to two thousand gallons per annum, working for eight or ten months without rest. Such a drain on the fat and protein must result in a low immunity.

Among his pigs tuberculosis had been very prevalent, even under the most scrupulous hygiene, but he had completely eradicated it in one year by attention to the vitamin-content of the diet, without any methods of isolation or disinfection. Almost every prize animal in a certain famous herd of cattle gave positive results with the tuberculin test, while the other members, not fed on artificial foods, showed a far smaller proportion of reactors.

The rarity of tuberculosis in sheep, horses and bullocks was to be ascribed to their more natural life. In collaboration with Dr. Chalmers Watson of Edinburgh University, he had found that pigs fed on a vitamin-rich diet passed one-third less protein in their stools than those fed on the usual substances. He had found it important to supply animal protein, as there was a conversion loss of 25 per cent. on vegetable protein. Slaughter of all tuberculous cows in the country would give immunity for two years only. It was not possible to pull down all the cowsheds and they were full of tuberculosis. Sunlight, cleanliness, segregation and disinfection were good measures, but would not eradicate the disease. The only satisfactory method was to increase the natural immunity of the animals by providing a diet rich in carbohydrate, protein, mineral salts, and vitamins.

RATS AND A FRUIT DIET

Experiments on rats made at the Lister Institute seem to prove the value of sunlight and vitamins. It is stated that rats fed on boiled meat in a dark room lost weight rapidly, while the same rats fed on oranges in the sunlight regained their normal weight in a short time. According to the views of many authorities, fruits contain vitamins gathered from sunlight, and of all fruits oranges and lemons contain the highest percentage of stored sunlight. It is this property which makes sunlight and fresh fruit so valuable in the treatment of rickets, certain forms of tuberculosis and other debilitating and crippling conditions. The vitamins are contained in sunlight and transferred to fruits, a fact which renders fresh fruits and fresh vegetables essential to health and which Dr. Leonard Williams insists upon vehemently and vigorously in "The Science and Art of Living."

VIENNA LETTER

Vienna, March 12, 1925.

THE LIMITATION OF FAMILIES IN HUNGARY

The Statistical Bureau of Budapest has called the attention of the government to the unexpected result that the increase of the population is far from being satisfactory. In large towns the general increase is not more than from 10 to 15 per cent., whilst in small provincial towns it varies from 3 to 5 per cent., and there are villages the inhabitants of which have decreased in number during the last five years in consequence of emigration. This state of affairs has naturally caused some uneasiness among those who regard increase of population as an indication of national prosperity.

The first and most obvious cause of the diminished rate of increase is emigration. Although multitudes of emigrants come back penniless from Mexico, Brazil and Cuba, hundreds and hundreds continue to ask for emigration passports to these countries.

Another factor in the question is the dangerous spread of the "only child" system, which is threatening to place Hungary in a position similar to that of France some 30 to 35 years ago. It seems strange that the hygienic authorities of the state should be so apathetic as they are in regard to this problem, for it might be possible to convince some delinquents of the error of their ways, and popular lectures on the perils of artificially induced abortion might act as a deterrent. In some parts of the country ordinary peasant women can manipulate the uterine sound or a catheter for the purpose in question with admirable skill, observing all the rules of antisepsis in their work. The police are aware of this fact but can do nothing because offenders evade detection by performing these operations mostly in the second or third month of pregnancy, before the woman's condition has become noticeable.

Hungary being an agricultural country, the shortage of able-bodied men is especially felt by farmers and landed proprietors—so much so, indeed, that last summer in some parts of the country harvesting had to be put off from week to week for want of hands. This fact induced the board of the National Hungarian Agricultural Society to ask the government to take some measures against this national peril, which in popular language is called "egyke" (onelet, only child). They were particularly desirous that the government should prohibit the sale of articles for the mechanical prevention of conception (condoms), which, according to the board, are mostly to blame for the prevalence of the only child system.

The question being to some extent connected with public hygiene, the government requested the Superior Hygienic Committee to give an opinion thereon. The text of this opinion was compiled by a university professor, who acknowledged that the law relating to artificially induced abortion is rather lax, and promised that the committee will also see that in future the medical students of the university and the midwives in the midwifery schools shall be instructed to enlighten their patients as to the dangers and evil consequences of artificial miscarriage.

In discussing the general subject of the limitation of the family, Professor Barsony said that, in his opinion, the increase of population, looking at it from a hygienic point of view, was a question of food supply only, for the propagating rate of mankind, when left to itself, tended to rapid increase, but the supply of food was limited and increases only slowly. In consequence of these views being generally accepted heads of families were now becoming anxious to limit the number of their descendants. Therefore, the first thing to do is to improve the economic conditions in the land and then we need not fear decrease of the birth rate, because it is an old experience in the history of mankind that among prosperous conditions of people the birth rate increases, while bad economic conditions involve the decrease of birth rate.

As regards the abuses done by inducing miscarriages, it is the duty of the law to prosecute the offenders.

The physical well-being of the people, their education, the increase of public wealth, the improvement of the hygienic administration of the country, the inspection and disciplining of individuals dealing with obstetrics, the directing and controlling of the nursing hygiene of infants—these are some of the things most urgently required to be done, and as a result of them a numerical increase of the population of the country may be expected, even if the births do not increase in the same proportion.

PROPOSED NOTIFICATION OF ABORTION IN GROSSWARDEIN

The Municipal Board of Sanitation of the town of Grosswardein intends to issue an order which makes it obligatory to notify cases of miscarriage. At a meeting of doctors convened to discuss the matter the majority held that compulsory notification of abortion would have only one advantage—namely, that prosecution in case of criminal abortion would thereby be facilitated, although malpractice could not be suppressed in this manner. Women would be driven into the hands of unauthorized midwives, and the number of deaths would thus be increased. The difficulty of ensuring secrecy in the working of a system of notification, and the serious injustice which might arise therefrom, occasioned the rejection of the plan.

THE PRICE OF DRUGS IN THE NEAR EAST COUNTRIES

Since the first day of the war the price of drugs has continually risen, and although the boards of health have issued several orders on the subject complaints of infringements of the law are continually made. The druggists state in their defence that, owing to bad postal communication, they are obliged to travel abroad in order to purchase supplies. In peace time they simply wired to Vienna, Berlin or London for drugs, and within a few days they had them. The parcel post communication is not very reliable now. A letter to Germany is sometimes two weeks or more on the way. Goods can be imported only by a person who accompanies the goods wagon. Freight and duties are expensive. Even if the druggist can buy cheaply, a poor man who is not a member of some sick club cannot afford to pay the fancy prices of drugs. For instance, a bottle containing 200 g. of a simple decoction of senega root costs the equivalent of a day's wage of a laborer; 10 g. of aspirin distributed in 1 g. powders cost the equivalent of two kilo meat; before the war the same quantity of aspirin was equivalent in cost to half a kilo meat. Salvarsan, owing to the spread of syphilis consequent upon the war, stands at an exorbitant price. Several druggists have already been fined for high prices, but until more normal traffic conditions prevail they cannot sell at lower figures. English and American medicines, which were very highly esteemed before the war, can no longer be seen here, because of the rate of exchange. Prohibitive prices force doctors to use inferior preparations, and even these are very costly. Several enterprising druggists have attempted to manufacture drugs, but the lack of good machinery, raw materials, and skilled staff resulted in production of inferior, unreliable or useless medicines. The boards of health of the Near East states are urging the necessity of importation of foreign drugs; only in this way can improvement in health conditions be obtained.

IS SCARLET FEVER AN ACCIDENT?

Some time ago a hospital electrician at an Austrian hospital contracted scarlet fever and some serious complications followed the fever. An action was thereupon brought under the Workmen's Compensation Act against the municipality, as the employer of the electrician. The district judge found that the contraction of the fever was an injury by accident arising out of and in the course of the man's employment within the meaning of the Workmen's Compensation Act, and he awarded the applicant compensation at the rate of 250,000 Austrian crowns (about three dollars). The municipality appealed, and the case was heard before the Court of Appeal. The court unanimously allowed the appeal.

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MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Diseases Reported for the Week Ending
March 21, 1925

Anthrax	1	Pneumonia, lobar	186
Chickenpox	170	Scarlet fever	308
Diphtheria	73	Septic sore throat	5
Encephalitis lethargica	2	Syphilis	42
Epidemic cerebrospinal meningitis	1	Suppurative conjunctivitis	6
German measles	233	Trachoma	4
Gonorrhea	87	Trichinosis	1
Influenza	143	Tuberculosis, pulmonary	134
Measles	597	Tuberculosis, other forms	28
Mumps	100	Typhoid fever	11
Ophthalmia neonatorum	20	Whooping cough	157

Diseases Reported for the Week Ending
March 28, 1925

Anterior poliomyelitis	3	Pneumonia, lobar	177
Chickenpox	143	Scarlet fever	355
Diphtheria	76	Septic sore throat	1
Dog-bite requiring anti-rabic treatment	7	Syphilis	34
Epidemic cerebrospinal meningitis	5	Suppurative conjunctivitis	15
German measles	255	Tetanus	2
Gonorrhea	87	Trachoma	3
Influenza	72	Trichinosis	1
Measles	675	Tuberculosis, pulmonary	147
Mumps	52	Tuberculosis, other forms	28
Ophthalmia neonatorum	33	Typhoid fever	16
		Whooping cough	168

Diseases Reported for the Week Ending
April 4, 1925

Chickenpox	133	Encephalitis lethargica	2
Diphtheria	104	Epidemic cerebrospinal meningitis	4
Dog-bite requiring anti-rabic treatment	6	German measles	203
Gonorrhea	100	Trachoma	2
Influenza	84	Trichinosis	2
Measles	738	Tuberculosis, pulmonary	93
Mumps	86	Tuberculosis, hilum	1
Ophthalmia neonatorum	31	Tuberculosis, other forms	22
Pneumonia, lobar	177	Typhoid fever	7
Scarlet fever	283	Whooping cough	124
Syphilis	52	Typhus fever	2
Suppurative conjunctivitis	7		

RESUME OF COMMUNICABLE DISEASES
March, 1925

GENERAL PREVALENCE

During the month of March the diseases showing an increase were: Measles, lobar pneumonia, typhoid fever and whooping cough.

	Mar., 1925	Feb., 1925	Mar., 1924
Measles	2,747	2,204	4,055
Pneumonia, lobar	817	798	556
Typhoid fever	42	33	23
Whooping cough	700	602	422

RARE DISEASES

Anterior poliomyelitis was reported from Andover, 1; Beverly, 1; Everett, 1; Fall River, 1; Lowell, 1; Melrose, 1; Newton, 1; total, 7.

Anthrax was reported from Lynn, 1.

Dog-bite requiring anti-rabic treatment was reported from Lowell, 3; Northampton, 4; Somerville, 1; Worcester, 1; total, 9.

Encephalitis lethargica was reported from Beverly, 1; Boston, 4; Brookline, 1; Gardner, 1; Norwood, 1; Springfield, 2; Webster, 1; total, 11.

Epidemic cerebrospinal meningitis was reported from Boston, 4; Clinton, 1; Greenfield, 1; Northampton, 1; South Hadley, 1; Somerville, 1; Worcester, 1; total, 10.

Hookworm was reported from Boston, 2.

Septic sore throat was reported from Beverly, 1; Boston, 8; Brookline, 2; Holyoke, 1; Newton, 1; Somerville, 1; Whitman, 1; total, 16.

Tetanus was reported from New Bedford, 2.

Trachoma was reported from Boston, 7; Cambridge, 1; Chelsea, 1; Lowell 1; Worcester, 1; total, 11.

Trichinosis was reported from Boston, 2; Everett, 1; total, 3.

Typhus was reported from Boston, 1; Winthrop, 1; total, 2.

DISTRIBUTION

All Communicable Diseases

	Mar., 1925	Mar., 1924
Total cases (all causes)	10,613	12,437
Case rate per 100,000 population	262.9	310.7

Certain Prevalent Diseases

Diphtheria	Mar., 1925	Mar., 1924
Total cases	429	629
Case rate per 100,000 population	10.6	15.7

Measles	Mar., 1925	Mar., 1924
Total cases	2,747	4,055
Case rate per 100,000 population	68.1	101.3

Cities and towns noticeably exceeding their median endemic index*:

Dartmouth	(0)	21	Dedham	(1)	20
Fairhaven	(0)	8	Framingham	(3)	96
New Bedford	(6)	101	Holliston	(0)	16
Ashland	(0)	39	Norwood	(0)	19
Boston	(659)	877	Quincy	(33)	57
Brookline	(17)	79	Amesbury	(2)	61
Canton	(0)	27	Chelsea	(23)	79

Haverhill	(5)	146	Somerville	(55)	141
Reading	(0)	24	Winchester	(1)	82
Revere	(0)	35	Woburn	(1)	22
Stoneham	(9)	36	North Adams	(1)	13
Medford	(32)	93			

Scarlet Fever	Mar., 1925	Mar., 1924
Total cases	1,458	2,100
Case rate per 100,000 population	36.1	52.5

Cities and towns noticeably exceeding their median endemic index*:

Provincetown	(0)	15	Gardner	(6)	13
Framingham	(6)	44	Northboro	(0)	10
Marlboro	(1)	11	Chicopee	(5)	14
Norwood	(2)	23	Springfield	(31)	119
Salem	(13)	35			

Tuberculosis, Pulmonary	Mar., 1925	Mar., 1924
Total cases	601	484
Case rate per 100,000 population	14.9	12.1

Tuberculosis, Other Forms	Mar., 1925	Mar., 1924
Total cases	105	79
Case rate per 100,000 population	2.6	2.0

Typhoid Fever	Mar., 1925	Mar., 1924
Total cases	42	23
Case rate per 100,000 population	.1	.6

Whooping Cough	Mar., 1925	Mar., 1924
Total cases	700	422
Case rate per 100,000 population	17.3	10.5

Cities and towns noticeably exceeding their median endemic index*:

Dartmouth	(0)	10	Concord	(0)	13
Boston	(127)	152	Winchester	(0)	17
Canton	(0)	29	Worcester	(26)	37
Swampscott	(4)	9	Greenfield	(4)	27
Winthrop	(1)	14	Williamstown	(0)	8
Arlington	(4)	16			

*The median endemic index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure. The numbers in parentheses after the name of each city and town indicate the median endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

RHODE ISLAND STATE BOARD OF HEALTH

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING MARCH 7, 1925

Diphtheria	
Providence	8
Pawtucket	2

Measles	
Pawtucket	2
Providence	2
Woonsocket	8
Charlestown	2
Lincoln	1
South Kingstown	1
	16

Whooping Cough	
Providence	1
East Greenwich	4

Cerebrospinal Meningitis	
South Kingstown	1

Chickenpox	
Providence	2
Pawtucket	6

Scarlet Fever	
Cranston	3
Pawtucket	3
Providence	10
Charlestown	2
East Providence	1
North Kingstown	1
North Providence	1
Tiverton	2
Woonsocket	5
	28

German Measles	
Westerly	1

Typhoid Fever	
Providence	1

Pneumonia	
Cranston	1

Malaria	
Providence	1

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING MARCH 14, 1925

Diphtheria	
Newport	1
Providence	7
Woonsocket	1
	9

Measles	
Cranston	1
Providence	1
Cumberland	6
	8

German Measles	
Providence	11
Woonsocket	8
Barrington	1
Westerly	1
	21

Mumps	
Coventry	1

Ophthalmia Neonatorum	
Cranston	1

Septic Sore Throat	
Providence	1

Scarlet Fever	
Cranston	7
Pawtucket	4
Providence	10
Cumberland	2
East Greenwich	1
East Providence	1
Coventry	1
Warwick	1
Westerly	1
	28

Influenza	
Providence	3
Coventry	2
Cumberland	4
	9

Cerebrospinal Meningitis	
Providence	1

Chickenpox	
Providence	3
Pawtucket	5

Whooping Cough	
Providence	1
Cumberland	3

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING MARCH 28, 1925

(Including all cases reported before 11 A. M., Monday, March 30, 1925)

Diphtheria	
Fairfield County	
Bridgeport	6
Darien	1
Shelton	1
Stamford (C)	1
Stratford	2
Hartford County	
East Hartford	1
Hartford	3
New Britain	3
Simsbury	1
Southington	4
Litchfield County	
Plymouth	2
Winchester	2
New Haven County	
Ansonia	2
Milford	1
New Haven	1
Wallingford (B)	1
Waterbury	2
New London County	
Norwich (C)	1
Tolland County	
Rockville	1
Windham County	
Plainfield	1
Willimantic	1
State total	38
Last week	49

The following diphtheria bacilli carriers were reported:

Bristol	1
Hartford	7
New Haven	1
Norwalk	3

Typhoid Fever	
Hartford County	
Bristol	1
State total	1
Last week	1

Scarlet Fever	
Fairfield County	
Bridgeport	14
Danbury (C)	2
Danbury (T)	1
Fairfield	1
Greenwich	3
Shelton	34
Stamford (C)	6
Stratford	1
Hartford County	
Berlin	1
Bristol	2
Hartford	8
Manchester	2
New Britain	2
Rocky Hill	1
West Hartford	2
Litchfield County	
Litchfield	1
Plymouth	1
Thomaston	2
Watertown	1
Middlesex County	
Cromwell	1
Middletown (C)	1
Middletown (T)	3
Portland	2
New Haven County	
Ansonia	2
Derby	2
Guilford	1

Hamden	2
New Haven	20
Wallingford (B)	1
Waterbury	3
West Haven	2
Woodbridge	1
New London County	
Groton (B)	1
Norwich (T)	1
Stonington	1
Tolland County	
Stafford	1
Windham County	
Putnam (C)	2
Putnam (T)	1
Willimantic	1
Windham	1
State total	135
Last week	138

Measles

Fairfield County	
Shelton	1
Stamford (C)	2
Hartford County	
Hartford	1
New Britain	12
Southington	1
Litchfield County	
New Hartford	1
Middlesex County	
Cromwell	5
East Haddam	11
Haddam	1
Middlefield	10
Middletown (C)	25
Middletown (T)	20
Saybrook	6
New Haven County	
Beacon Falls	9
Branford	31
Derby	1
Hamden	1
Milford	1
New Haven	33
New London County	
Stonington	1
State total	173
Last week	167

Whooping Cough

Fairfield County	
Greenwich	1
New Canaan	3
Stamford (T)	11
Hartford County	
Enfield	5
Hartford	7
Litchfield County	
Thomaston	2
Washington	5
Middlesex County	
Chester	1
Clinton	2
Middletown (T)	5
Portland	4
New Haven County	
Hamden	3
Meriden (C)	2
New Haven	17
Waterbury	2
New London County	
Groton (B)	9
New London	1
Norwich (C)	1
State total	81
Last week	54

Other Communicable Diseases

Chickenpox	80
Conjunctivitis inf.	1
Encephalitis epid.	3
German measles	42
Influenza	16
Mumps	98
Paratyphoid fever	1
Pneumonia (broncho)	46
Pneumonia (lobar)	54
Septic sore throat	6
Trachoma	1
Tuberculosis (pul.)	21
" (other forms)	2
Gonorrhea	7
Syphilis	30

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NEWS ITEMS

THE committee on scientific research of the American Medical Association has made the following grants: Harry L. Huber, Chicago, for a chemical and immunological study of pollens, $500; Dr. Arthur M. Yudkins, New Haven, for a study of experimental cataract, $500; Dr. Arthur W. Meyer, Stanford University, for a study of experimental polyneuritis, $400; Dr. Margaret M. Hoskins, University of Arkansas Medical School, Little Rock, for a study of physiological action of thyroxin, $100; Dr. Charles E. Simon, Johns Hopkins University, for an experimental study of epilepsy, $100.—William G. Lennox, Harvard Medical School, for an experimental study of epilepsy, $100.—*Science.*

DR. WALTER L. BIERRING, Des Moines, Iowa, was recently elected President of the honorary medical fraternity Alpha Omega Alpha. He succeeded Dr. John L. Heffron, who until his recent death was Dean of the College of Medicine of Syracuse University. Doctor Bierring has for several years been Secretary of the Federation of State Medical Boards of the United States, and is one of the three representatives of this Federation on the National Board of Medical Examiners.—*National Board Bulletin.*

DR. SAMUEL T. DARLING sailed on March 21 from New York for Europe to become director of an expedition that will study the malaria condition in countries about the Mediterranean, under the auspices of the Rockefeller Foundation. The countries to be visited are Switzerland, Italy, Greece, Palestine, Egypt and Morocco. Dr. Darling will complete this work by July 1 and will then go to England to address a meeting of the Royal Society of Tropical Medicine at Oxford University.—*Science.*

THE Leeuwenhoek medal of the Amsterdam Academy of Sciences will be awarded this year to Dr. F. d'Herelle for his discovery of bacteriophagy. This medal is given to the investigator who, in the opinion of the committee, has advanced most the progress of bacteriology in the preceding ten years. The other recipients have been Ehrenberg, 1875; Cohn, 1885; Pasteur, 1895; Bejrinck, 1905, and David Bruce, 1915.—*Science.*

DR. HUGO MELLA, acting head of the department of neuropathology of the Harvard Medical School, has been appointed associate professor of neuropathology and psychiatry in the University of Colorado, Denver, and associate director of the Colorado Psychopathic Hospital.—*Science.*

DR. JOHN LOVETT MORSE will speak over the radio from station WEEI at 8.45 next Saturday evening. His subject will be "Certified Milk: Why and When."

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NOTICE

***Notices of meetings* must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.**

REPORTS AND NOTICES OF MEETINGS

NEW ENGLAND ASSOCIATION FOR PHYSICAL THERAPEUTICS

THE regular monthly meeting of the New England Association for Physical Therapeutics will be held at the Hotel Victoria, Tuesday, April 28th, at 8 o'clock. All regular physicians are cordially invited.

HAMPDEN DISTRICT MEDICAL SOCIETY

THE Annual Meeting of the Society was held at Hotel Nonotuck, Holyoke, on Tuesday, April 21, at 4 P. M.

Regular business and election of officers for the ensuing year.

Paper: "The Causes and Prevention of Contagious Disases." Dr. Edwin H. Place of Boston.

Discussion by Fellows.

Dinner at 5.45 P. M. at expense of Society.

The Censors meet for the examination of candidates at Springfield Academy of Medicine, 137½ State St., Springfield, on Thursday, May 7, at 4 P. M.

Hervey L. Smith, *Secretary.*

CENSORS' MEETING

The Censors of the Suffolk District Medical Society will meet for the examination of candidates at the Medical Library, No. 8 The Fenway, Thursday, May 7, 1925, at 4 o'clock.

Candidates should make personal application to the Secretary, and present their medical diploma at least one week before the examination.

Lesley H. Spooner, M.D., *Secretary.*
520 Commonwealth Avenue, Boston.

AMERICAN BOARD OF OTOLARYNGOLOGY

The next examination conducted by the American Board of Otolaryngology will be held at the Ambassador Hotel, Atlantic City, on Tuesday, May 26th, at 9 A. M.

Application blanks may be obtained from Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital, Apr. 28, 1925, at 8:15 P. M. The program follows:—

1. Demonstration of Cases.
2. The Gall Bladder, An Old Subject from Some Newer Points of View. Evarts A. Graham, Prof. of Surgery, Washington University, St. Louis, Mo.
3. Letters of a Medical Apprentice of a Century Ago. Dr. David Cheever, P. B. B. H.

All members of the Medical Profession, Medical Students and Nurses are invited.

S. A. Levine, *Secretary.*

AMERICAN CLIMATOLOGICAL AND CLINICAL ASSOCIATION

Forty-second annual meeting at Washington, D. C., Tuesday, May 5, and Wednesday, May 6, 1925.

President—George W. Norris, M.D., Philadelphia, Pa.

Vice-Presidents—David R. Lyman, M.D., Wallingford, Conn.; Philip Marvel, M.D., Atlantic City, N. J.

Secretary and Treasurer—Arthur K. Stone, M.D., Framingham Centre, Mass.

Recorder—Cleaveland Floyd, M.D., Boston, Mass.

Council—Carroll E. Edson, M.D., Denver; William Duffield Robinson, M.D., Philadelphia; Charles W. Richardson, M.D., Washington, D. C.; Gerald B. Webb, M.D., Colorado Springs; Lawrence Litchfield, M.D., Pittsburgh; J. Woods Price, M.D., Saranac Lake, N. Y.; Walter A. Baetjer, M.D., Baltimore.

Delegate to the Congress of American Physicians and Surgeons—Thomas Darlington, M.D., New York.

Alternate—Walter L. Niles, M.D., New York.

Preliminary Program Forty-Second Annual Meeting, 1925

The Headquarters of the Association will be at the Hotel Willard, Washington, D. C.

Council Meeting will be held at the Hotel Willard, Monday evening, May 4th, at 8:30 P. M.

FIRST DAY, MAY 5

Scientific Session, 10:00 A. M. to 12:30 P. M.

Business Session, 12:30 P. M.

Luncheon Recess, 1:00 P. M.

Reception—House of Dr. Charles W. Richardson, 1337 Connecticut Avenue, 1:00 P. M.

Scientific Session, 2:30 to 5:00 P. M.

Adjourn, 5:00 P. M.

General Meeting of the Congress at Hotel Washington, 8:00 P. M.

SECOND DAY, MAY 6

Scientific Session, 9:00 A. M. (promptly).

Business Session—Election of Officers and New Members, 12 M.

Dr. Sterling Ruffin invites the Association to be his guests at luncheon at 1150 Connecticut Avenue.

General Meeting of the Congress, 2:00 P. M.

Annual Dinner at the Metropolitan Club, 7:30 P. M.

Program of Scientific Sessions, Hotel Willard, Washington, D. C.

TUESDAY, MAY 5, 1925, 10:00 A. M.

President's Address, George W. Norris, Philadelphia, Pa.

MEMORIAL NOTICES

William D. Alsever, Syracuse, N. Y.; Norman Bridge, Los Angeles, Calif.; Col. George E. Bushnell, Pasadena, California; James A. Hart, Colorado Springs, Col.; John L. Heffron, Syracuse, N. Y.

1. Clinical Classification and Recognition of Hyperthyroidism and Goiter. By John P. Sawyer of Cleveland.
2. Basal Metabolism Determination in the Management of Thyroid Disease. By *James H. Means, M.D.*, of Boston.
3. Differential Diagnosis Between Hyperthyroidism and Psychoneuroses. By *Edward A. Strecker, M.D.*, of Philadelphia.

4. Iodine in Treatment of Disease of Thyroid Gland. By *David Marine, M.D.*, of New York.
5. Linitis Plastica: Total Gastrectomy by Finney Operation: Recovery. By Lawrence Litchfield of Pittsburgh.
6. The Treatment of Pertussis by Means of the X-Ray. By *Henry I. Bowditch, M.D.*, of Boston.

BUSINESS MEETING, 12:30 P. M.

LUNCHEON RECESS

Reception at the home of Dr. Charles W. Richardson, 1337 Connecticut Avenue.

TUESDAY, MAY 5, 1925, 2:30 P. M.

7. The Use of Chlorin in the Treatment of Upper Respiratory Tract Infections. By *Lt. Col. Edward B. Vedder*, U.S.A., Edgewood, Md. Discussion will be opened by Charles W. Richardson.
8. Three Years' Experience in the Operation of a Pay Clinic. By Walter L. Niles of New York.
9. The Clinical Significance of Indeterminate Rales in Pulmonary Tuberculosis. By Major E. A. Bruns, M. C., Denver.
10. The Present Status of the Clinical Use of Quinidin Sulphate. By Paul D. White of Boston.

Discussion will be opened by Dr. Litchfield.

11. Extra Pleural Thorocoplasty for Pulmonary Tuberculosis. By *Howard Lillenthal, M.D.*, of New York.
12. The Sanatorium Endocrines. By David A. Stewart of Ninette.
13. The Recognition and Treatment of the Effort Syndrone in Civil Life. By George Morris Piersol of Philadelphia.
14. Metallic Sound. By Hugh M. Kinghorn of Saranac Lake.

WEDNESDAY, MAY 6, 1925, 9:00 A. M.

15. Tonsillar Infection as a Cause of Severe Vertigo. By Judson Daland of Philadelphia.
16. Pennsylvania's Plans for Conserving the Waters of the State. By Charles H. Miner of Harrisburg.
17. The Dilution and Concentration Test of Renal Function. By Joseph H. Pratt of Boston.
18. Preliminary Report on the Effects of Injections of Adrenalin and Ether Anesthesia Upon the Blood Sugar Level. By L. W. Gorham, *Thomas Ordway, M.D.*, and *F. P. Huested, M.D.*, of Albany.
19. The Importance of Pleurisy in the Diagnosis and Prognosis of Pulmonary Tuberculosis. By Fred H. Heise of Trudeau, and Lawrason Brown of Saranac Lake.
20. Tension Theory of Pleural Pain. By Harry A. Bray of Ray Brook, N. Y.
21. An Unusual Result of Focal Infection from Decayed Teeth. By Delancey Rochester of Buffalo.
22. Addison's Disease, with Report of Cases. By C. Fox Gardiner, and *Leo William Bortree, M.D.*, of Colorado Springs.
23. A Biophysical Explanation of a Certain Type of Hemorrhage Commonly Met in Pulmonary Tuberculosis. (Paper to be read by title.) By F. M. Pottenger of Los Angeles.

12 M.—Annual Meeting and Election of Officers.

1:00 P. M.—The members of the Association are invited to be guests of Dr. Sterling Ruffin, 1150 Connecticut Avenue.

2:00 P. M.—General Meeting of the Congress.

Annual Dinner, 7:30 P. M. Metropolitan Club.

NOTES

This meeting of the Association is held as part of the Congress of American Physicians and Surgeons, and all members attending the meeting are expected to register at the Congress Headquarters.

On Tuesday, May 5, at 1:00 P. M., the members of the Association are to be guests of Dr. and Mrs. Charles W. Richardson at a reception given to the Presidents of the American Climatological and Clinical Association, the American Otological Association, and the American Ophthalmological Association.

On Wednesday, May 6, at 1:00 P. M., the members of the Association are to be guests of Dr. Sterling Ruffin, 1150 Connecticut Avenue.

The names in italics are not members of the Association but have been placed upon the program by invitation.

There will be a meeting of the Council at the Hotel Willard Monday evening, May 4, at 8:30 P. M.

Because of the fact that there are to be but three scientific sessions, the meetings will begin promptly and the rules for discussion will be closely adhered to by the president.

Annual Dinner will be held at the Metropolitan Club at 7:30 P. M.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

A SPECIAL meeting of the Essex South District Medical Society was held at Danvers State Hospital on April 15, 1925, upon the invitation of the Superintendent, Dr. McDonald. Clinical demonstrations were presented from five until seven o'clock.

The speaker of the evening was Dr. Eugene Kelley, Commissioner of Health of the Commonwealth, who discussed the present status of serology in relation to scarlet fever and diphtheria. He also spoke of the habit clinics recently inaugurated by the department and announced the readiness of the state health authorities to coöperate with the profession in all public health matters.

Motion pictures were shown illustrating prenatal care, methods of dealing with tuberculosis and the care of the teeth.

A vote was passed, expressing appreciation of the hospitality extended.

Wm. T. Hopkins, *Reporter.*

NEW ENGLAND SOCIETY OF PSYCHIATRY

On Wednesday, April 8th, the New England Society of Psychiatry was entertained at the McLean Hospital, Waverley, Mass., as the guests of the Superintendent, Dr. Frederick H. Packard. Preceding the luncheon the members were given an opportunity to visit the various departments of the hospital. Interesting papers were presented by Dr. Martin W. Peck, Boston, Mass., and Dr. John C. Whitehorn, Waverley, Mass.

MEETING OF THE HARVARD MEDICAL SOCIETY

The Harvard Medical Society met at the Peter Bent Brigham Hospital on Tuesday evening, April 14th. Two cases were demonstrated. The first was a woman who had high blood pressure and various symptoms of renal disease since 1916. Since that time there has been no marked change in her condition. One significant point in the physical findings was the high systolic pressure with a relatively low diastolic pressure. Dr. O'Hare stated that patients with this combination usually have a much better prognosis than those with a high diastolic pressure and relatively low systolic pressure.

The second case was one with paroxysmal tachycardia. The simpler method of ending the attacks, such as vagal and ocular pressure, did not avail in this case. Quinidine renders some free from attacks. Others are rendered free from attacks by being constantly digitalized. The latter method is being tried in this case.

The first paper of the evening was presented by Dr. Burgess Gordon on "The Mechanism of Death from Quinidine and a Method of Resuscitation: an experimental study," by Drs. Gordon, Marcell, Walton and S. A. Levine.

In their lethal experiments on cats, they found that there is a definite relation between the size of the dose of quinidine and the weight of the animal, also between the speed of administration and the amount of the dose. 25 to 30 mg. per kilo usually caused death. 25 mg. per kilo caused marked symptoms, particularly respiratory difficulty. The animal showed shallow labored breathing.

Immediately following the administration of the quinidine there was a sudden fall in blood pressure, then a gradual but incomplete recovery, beginning two minutes after the injection. After five or six doses, the pressure fell to 45 mm. and remained near that level until death occurred. Pressure on the abdominal aorta after the injection of the drug did not prevent the fall in pressure. The fall seems to be due to some definite effect on the aorta or peripheral vessels.

In observations on the heart of the experimental animal it was found by the electrocardiogram that small doses caused a slight prolongation of the ventricular complex. In no case was there heart-block. By means of successive X-ray pictures, the heart was shown to contract following the injection. Later the heart returned to normal size, unlesss the dose was lethal, when it dilated.

Various methods of resuscitation were tried in animals that had been given lethal doses. When caffeine was given before the quinidine, it seemed that the animal could stand more of the latter drug. Caffeine given after quinidine restored the respiration when it had already stopped.

Of all the methods artificial respiration proved to be the most satisfactory. By giving caffeine as well, the respiration was restored more quickly.

In all the animals it was found that the heart beat for a short period after the respiration had ceased. In speaking of the practical value of these experiments Dr. Levine expressed the opinion that many of the fatalities in patients following quinidine administration are due to respiratory failure and that these might be saved by artificial respiration and the administration of caffeine.

Dr. Wm. de B. MacNider, Professor of Pharmacology, University of California, addressed the meeting on "The Cardio-vascular Action of Veratrum Viride in Normal and Certain Pathological States." In experiments on the turtle and frog Dr. MacNider found that veratrum produced a slowing of the heart and a fall in blood pressure. If atropine was administered during this slowing, the rate of the heart was quickened, showing that the decrease in rate caused by the veratrum is a vagal phenomenon. In larger dozes veratrum causes a secondary slowing due to depression of the heart muscle as shown by the fact that subsequent administration of atropine does not influence the rate.

At the same time that the fall in blood pressure occurs there is an increase of volume in the intestine, kidney and lung. This indicates that the drug acts directly on the vessel wall and so provides a factor, additional to the slow pulse, in producing a fall in blood pressure. This suggests that the drug would be useful in cases of hypertension with no marked sclerotic lesions of the arteries. The diuretic effect that the drug shows, in pathological conditions, may be due to dilatation of the kidney vessels. Veratrum may also find a field of usefulness in cases of cerebral hemorrhage to prevent recurrences by lowering the blood pressure. Some believe it to be especially valuable in the blood pressure changes of pregnancy.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

May 6, 1925. Annual meeting at Young Men's Christian Association Building, 40 Lawrence Street, Lawrence.

Franklin District Medical Society

The next meeting of the Franklin District Medical Society will be held on the second Tuesday in May.

Hampshire District Medical Society

The next meeting will be held the second Wednesday in May.

Middlesex East District Medical Society

Wednesday, May 13. Colonial Inn, North Reading.

Middlesex North District Medical Society

April 29, 1925.

Middlesex South District Medical Society

Winter Schedule—The plans for winter meetings of the Society include the stated meeting in April, two hospital meetings, and five meetings to be held in conjunction with the Suffolk District Medical Society and the Boston Medical Library (two surgical, two medical, and one general).

Norfolk South District Medical Society

Meetings will be held the first Thursday of each month to May, inclusive, at 12 noon, at the Norfolk County Hospital, South Braintree.

Suffolk District Medical Society

April 29. Annual meeting. "Hypertension and Longevity," Dr. Harold M. Frost.

Worcester District Medical Society

May 14, 1925. Annual meeting.

If you desire further information in regard to these meetings write to the Secretaries of the District Medical Societies (listed on page xi of the Advertising Section). The Massachusetts Medical Society Directory contains their addresses.

NEW ENGLAND STATE MEDICAL SOCIETIES

The annual meetings of the New England State Medical Societies are scheduled as follows:

Connecticut State Medical Society—Bridgeport, May 20-21, 1925.
Maine Medical Association—Bar Harbor, June 23-25, 1925.
Massachusetts Medical Society—Boston, June 9-10, 1925.
New Hampshire Medical Society—Manchester, May 19-20, 1925.
Rhode Island Medical Society—Providence, June 4, 1925.
Vermont State Medical Society—St. Johnsbury, Oct. 15-16, 1925.

BOOK REVIEWS

Elementary Morphology and Physiology for Medical Students: a Guide for the First Year and a Stepping-stone to the Second. By J. H. WOODGER, B. Sc. 8vo. pp. 528, fig. 255. Oxford University Press, American Branch, New York.

This text-book, intended for the elementary student of biology and prospective medical student, combines two points of view that are too often kept strictly separate,—that of the anatomist and of the physiologist. For many years, following the impetus given by Darwin, the morphologist dominated biology. More recently the physiologist has arisen to challenge his supremacy; so much so that an observer at the recent meetings of the American Association for the Advancement of Science could open a magazine review with the comment, "The consideration of subjects under discussion by the biological groups—was dominated by one interest, function."

The presentation of the problems of biology from this combined point of view reflects in an interesting manner the organization of the medical curriculum in England, where physiology arose, not as an outgrowth of the clinic, but as an independent science, comparable to geology or botany. Furthermore, through an historical accident of organization, the teaching of histology and much of embryology was delegated to the physiologist; so that the synthesis of morphology and physiology is quite natural.

The writer wisely refrains from overloading his book with a mass of anatomical facts. All detailed reference to the structure of molluscs and arthropods is omitted, as these are of little moment to the medical student,—but the successive stages in the line of descent from protozoon to mammal are surveyed, and the evidence for and the significance of evolution is clearly presented. Throughout the book runs a semi-philosophical strain, quite foreign to the usual dictionary of anatomical fact. The student is introduced at once to the scientific method as a method, with its underlying philosophy. Then the evidence of morphology, of comparative physiology, and of embryology are presented, always with a clear distinction between observation and interpretation; and finally the field is surveyed in a series of chapters which present, without attempting to answer, the problems of the causes of evolution, of heredity, of the development of the individual, of mechanism versus vitalism, and notably the problem of the behavior of the individual. This inclusion in an elementary text-book of morphology of a chapter on the rudiments of psychology is most valuable, as it emphasizes at the outset of his career the fact, too often forgotten by medical students and even practitioners, that the individual in his organization and reactions is something more than the sum of his various organs and physiological processes.

The Physiology of Mind. An Interpretation Based on Biological, Morphological, Physical and Chemical Considerations. By FRANCIS X. DERCUM, M.D. Second Edition. Philadelphia: Saunders, 1925.

The body of this well-known book deals with a biological or mechanistic interpretation of psychology, or, as Dr. Dercum prefers to call it, "physiology of the mind." He begins simply with the known facts regarding the substance and structure of protoplasm. The physiological principles noted in the unicellular organisms are shown to be present in a much more complexed form in multicellular forms of life. A physical and chemical conception of mind is maintained throughout. A chapter deals with the reaction of organisms in the light of Einstein's conception of energy.

When this biological and physical basis for brain physiology is applied to pathological conditions, the results are startling. The writer apparently believes that, "retraction of the dendrites and the axones of the neurones explains the palsies and anesthesias of hysteria. In other words, the functional break is referred to the synapses"; a mechanistic conception far from universally accepted. Again to quote,—"hysteria is a neuropathy of degeneracy. Its symptoms are always expressive of a biological inferiority." The author also lays great stress on the endocrine glands as the basic cause of certain mental disorders.

In an appendix Dr. Dercum makes a sharp attack on Freudism, as might be expected from one who looks upon mind in terms of physics and chemistry. The general tone of the author's arguments and his method of attack may be judged by the following quotation,—"The psychology of insanity, the psychological interpretation of the symptoms, is one thing; psychanalysis is another. The psychology of insanity is a legitimate field of scientific inquiry. Psychanalysis, on the other hand, is a cult, a creed, the disciples of which constitute a sect. To be admitted to its brotherhood it is merely necessary that the novice should be converted to the faith, not that he should be convinced by any scientific proof; for none such is possible. If the convert claims that he has found psychanalysis followed by cures, he places himself side by side with those who claim cures by means of hypnotism, divine healing, Christian Science, and like procedures."

The book can hardly be recommended to the general reader, expressing as it does such an extreme point of view on a controversial matter.

The Theory and Practice of the Steinach Operation with a Report on One Hundred Cases. By Dr. Peter Schmidt. And an Introduction to the English Edition by J. Johnston Abraham, C.B.E., D.S.O., M.A., M.D. (Dub.), F.R.C.S. (Eng). 150 pages. Price 7/6 net. Published by William Heinemann (Medical Books) Ltd., London.

This exposition of Professor Steinach's theories and report of the results of the operation devised by him, written by a co-worker, cannot be cast aside as fiction. It is a serious attempt to analyze the principles underlying vasoligation, and while it is necessarily speculative, the logic is sound, provided the premises are tenable. Schmidt explains the happy results obtained in almost all of the hundred reported cases as being due to the liberation of a testicular hormone which stimulates the other glands of internal secretion to greater activity, thereby speeding up the metabolism of the entire organism. This increased activity is not transient, he claims, but is, within limits, permanent. At least it has persisted for several years in a number of the cases quoted. The stimulation is not particularly sexual, although the sexual function improves along with the other functions.

Schmidt summarizes his estimate of the value of Steinach's work in the following paragraph:—

"The multifariousness of the therapeutic results and the extent of the theories these lead up to compel us to regard the endocrinology of the sexual glands inaugurated by Steinach as something quite new in medicine; it can be compared with the era of cellular pathology or of bacteriology. And like these, the endocrinology of the sexual glands will certainly irradiate the morphogenetic, pathogenetic and therapeutic ideas of every scientist and practitioner."

Whether his enthusiasm will be justified by later developments only time can tell. His book helps to place vasoligation upon a more or less scientific basis, and to remove it from the domain of white magic.

Serum Diagnosis of Syphilis by Precipitation. By R. L. Kahn, Immunologist to the Bureau of Laboratories, Michigan Department of Health. Published by Williams & Wilkins Company, Baltimore. Price $3.00.

The author brings together in one volume numerous papers, many of which have been published elsewhere, which give a detailed account of his experimental work leading up to the preparation of the Kahn test. It discusses the work of others in the same field. He gives all the details of the test as used at present on both the serum and spinal fluid, including a chapter on the clinical application of the test. The book should find its greatest usefulness in the hands of laboratory workers, though there are some parts of it which should appeal to the clinician. It is a comprehensive monograph and is exceedingly well done.

Physical Diagnosis. **By W. D. Rose, M.D. St. Louis: The C. V. Mosby Company. 1924.**

The only justifications for a new work on physical diagnosis are the inclusion of new facts or a more stimulating, suggestive presentation. The volume under review does not meet these requirements. The subject is treated in a fashion too elementary for the graduate physician, and without stimulus for the medical student. While most of the descriptions of signs are correct, the reader feels that the literature has been called upon for many statements rather than the writer's own experience. Especially is this true in the chapters dealing with the central nervous system. Little help is given the reader in evaluating the methods described, and the possible significance of many signs is not stressed. Investigation of the patient's physical condition loses much of its fascination if considered without imagination. Numerous illustrations accompany the text, many of which, because of undue size or intrinsic lack of interest, appear to be in the nature of padding.

The volume is, however, a conscientious attempt to describe the various physical signs and methods for their elucidation, and considerable effort has been made to suggest, at least, the underlying physics or physiology. Perhaps the reviewer asks too much in demanding more.